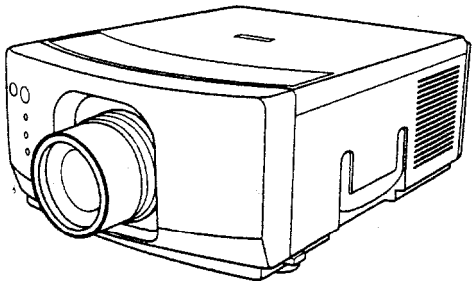
DESCRIPTION

SERVICE MANUAL
SHARP SERVICE-ANLEITUNG

SZ7K1XG-XV1EA



PAL/SECAM/NTSC SYSTEM
LCD PROJECTOR
LCD PROJEKTOR

MODELS
MODELLE XG-XV1E/A

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

Im Interesse der Benutzersicherheit (erforderliche Sicherheitsregeln in einigen Ländern) muß das Gerät in seinen Originalzustand gebracht werden. Außerdem dürfen für die spezifiziet-ten Bauteile nur identische Teile verwendet werden.

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Specifications

Product Type	LCD Projector
Models	XG-XV1E/A
* Video system	PAL/SECAM/NTSC 3.58/NTSC 4.43
Display method	LCD panel × 3, RGB optical shutter method
LCD panel	Panel size: 1.8″ (27.6 [H] × 36.9 [W] mm) Display method: Translucent TN liquid crystal panel Drive method: TFT (Thin Film Transistor) Active Matrix panel No. of dots: *786,432* dots (1,024 [H]× 768 [V])
Lens	1-1.6 zoom lens, F2.7 to 3.5, f = 66 to 106 mm
Projection lamp	370 W Metal halide
Contrast ratio	100:1
* Video input signal	BNC Connector: VIDEO, composite video, 1 Vp-p, sync negative, 75 Ω terminated RCA Connector: AUDIO, 0.5 Vrms more than 22 kΩ (stereo)
* S-video input signal	4-pin mini DIN connector Y (luminance signal):- 1 Vp-p, sync negative, 75 Ω terminated C (chrominance signal): Burst 0.286 Vp-p, 75 Ω terminated
* Video (monitor) output signal	BNC Connector: VIDEO, composite video, 1 Vp-p, sync negative, 75 Ω terminated RCA Connector: AUDIO, 0.5 Vrms less than 2.2 kΩ (stereo)
* Horizontal resolution	520 TV lines (video input), 700 TV lines (S-video input)
Audio output	*3* W + 3 W (stereo)
Computer RGB input signal	Video Signal: 15-pin mini D-sub connector (RGB 1), BNC connector (RGB 2): RGB separate type analog input: O-O.7 Vp-p, positive, 75 Ω terminated Stereo Minijack: AUDIO, 0.5 Vrms, more than 22 kΩ (stereo) Horizontal sync. signal: TTL level (positive/negative) or composite sync (Apple only) Vertical sync. signal: Same as above
RS-232C input terminal	9-pin D-sub male connector for controlling personal computer
Mouse input terminal (for IBM/Mac)	9-pin D-sub female connector for wireless mouse
Mouse input terminal (for PC98)	9-pin mini DIN connector for wireless mouse
Speaker system	3" (8 cm) round × 2
Rated voltage	AC 200 V-240 V
Rated frequency	60/50 Hz
Power consumption	*535* W
Operating temperature	+ *5°C* to + 40°C
Storage temperature	− 20°C to + 60°C
Cabinet	Plastic
I/R Carrier frequency	*40* kHz
Laser Pointer of Remote Control	Wave length : 670 nm Max. output : 1 mW Class II Laser Product
Dimensions (W × D × H)	359 × 585 × 208 mm projector only 444 × 585 × 208 mm incl. terminal cover
Weight	17.0 kg projector only
Supplied accessories	Remote control unit, Four AA batteries, Extra air filter, RGB signal cable (3 m), Macintosh adaptor, Two BNC/RCA adaptors, Mouse control cable for IBM PS/2 (15 cm), Mouse control cable for Mac (15 cm), Mouse control cable (3 m), AC cord, Terminal cover, Inverting labels, Lens cover (installed)
Replacement parts	Remote control (RRMCG1393CESA), Air filter (PFILD0058CEZZ), RGB signal cable (QCNW-4910CEZZ), Macintosh adaptor (QPLGJ1512CEZZ), Mouse control cable for IBM PS/2 (QCNW-4754CEZZ), Mouse control cable for Mac (QCNW-4755CEZZ), Mouse control cable (QCNW-4620CEZZ), AC cord

Note: * (for XG-XV1A as well as Australian and NewZealand versions of XG-XV1E)

Our projector uses LCD (Liquid Crystal Display) panels. These very sophisticated panels contain 786,432 pixels (×RGB) TFTs (Thin Film Transistors).
As with any high technology electronic equipment such as large screen TVs, video systems and/or video cameras, there are certain acceptable tolerances that the equipment must conform to. This unit has some inactive TFTs within acceptable tolerances, which may result in illuminated or inactive dots on the picture screen.
This will not affect the picture quality or the life expectancy of the unit.

Specifications are subject to change without notice.

NOTE TO SERVICE: PERSONNEL

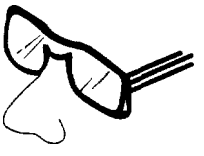
UV-RADIATION PRECAUTION

The light source, metal halide lamp, in the LCD projector emits small amounts of UV-Radiation.

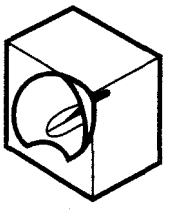
AVOID DIRECT EYE AND SKIN EXPOSURE.

To ensure safety please adhere to the following:

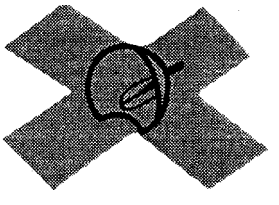
1. Be sure to wear sun-glasses when servicing the projector with the lamp turned "on" and the top enclosure removed.



2. Do not operate the lamp outside of the lamp housing.



3. Do not operate for more than 2 hours with the enclosure removed.



UV-Radiation and Medium Pressure Lamp Precautions

1. Be sure to disconnect the AC plug when replacing the lamp.
2. Allow one hour for the unit to cool down before servicing.
3. Replace only with same type lamp. Type CLMPF0046DE05 rated 63V/370W.
4. The lamp emits small amounts of UV-Radiation, avoid direct-eye contact.
5. The medium pressure lamp involves a risk of explosion. Be sure to follow installation instructions described below and handle the lamp with care.

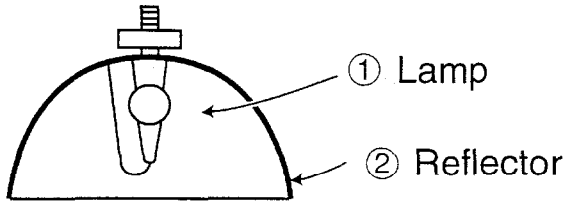
❑ Lamp Replacement

Note:

Since the lamp reaches a very high temperature during units operation replacement of the lamp should be done at least one hour after the power has been turned off. (to allow the lamp to cool off .)

Installing the new lamp, make sure not to touch the lamp (bulb) replace the lamp by holding its reflector ②.

[Use original replacement only.]



DANGER !— Never turn the power on without the lamp to avoid electric-shock or damage of the devices since the stabilizer generates high voltages at its start.

Since small amounts of UV-Radiation are emitted from an opening between the duct cover and the lamp housing, it is recommended to place the LENS CAP on the opening during servicing to avoid eye and skin exposurem (Fig. 1).

Note: Please obtain a lens cap before servicing a models XG-XV1 E/A that is received without one.

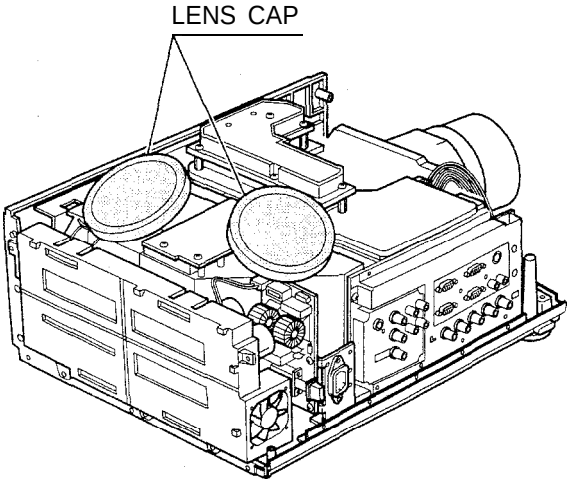
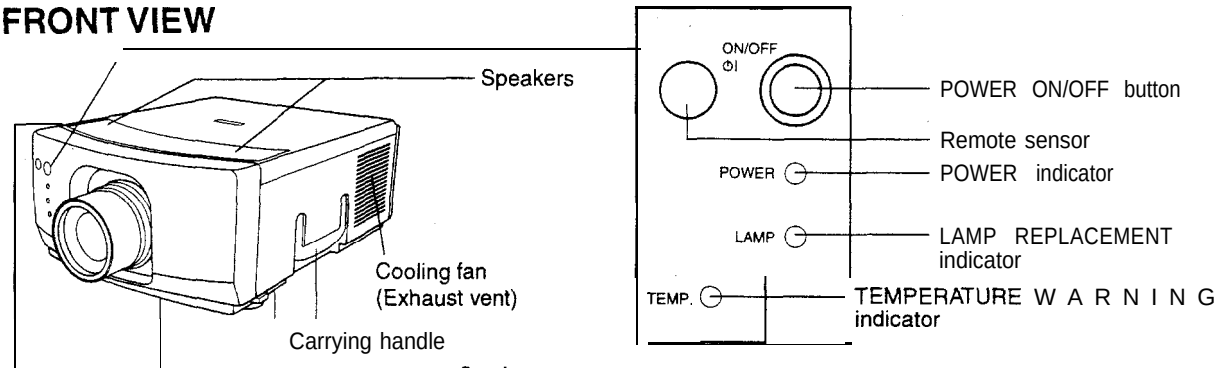


Figure 1.

Location of Controls

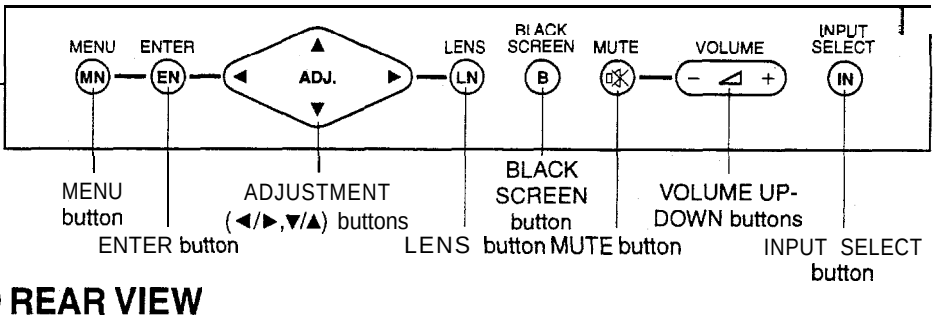
FRONT VIEW



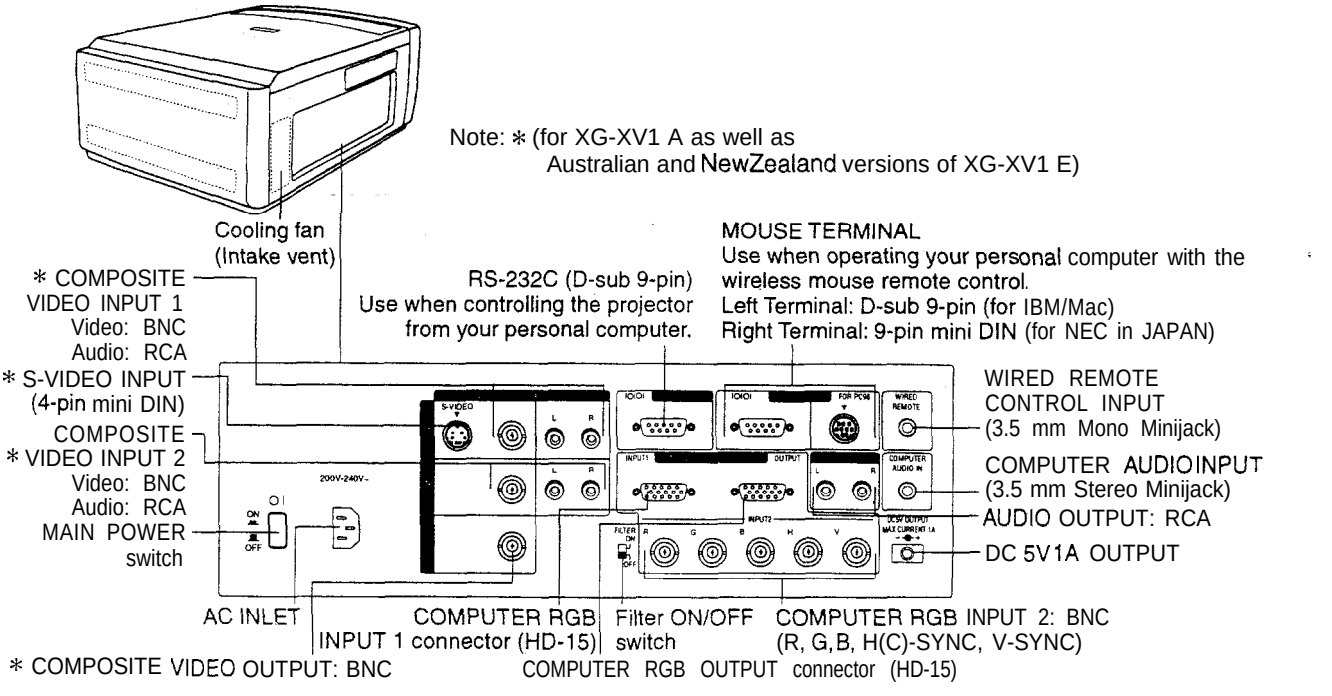
Cautions:

- The exhaust vent, the lamp cage cover and adjacent areas may be extremely hot during projector operation. To prevent injury, do not touch these areas until they have sufficiently cooled.
- Allow at least 10 cm of space between the cooling fan (exhaust vent) and the other nearest wall or obstruction.
- If the cooling fan becomes obstructed, a protection device will automatically turn off the projector lamp. This does not indicate a malfunction. Remove the projector plug from the wall outlet and wait 10 minutes. Then turn on the power by plugging the cord back in. This will return the projector to its normal mode.

OPERATION PANEL ON SIDE OF PROJECTOR



SIDE AND REAR VIEW


Note: * (for XG-XV1 A as well as Australian and NewZealand versions of XG-XV1 E)
Cooling fan (Intake vent)
* COMPOSITE VIDEO INPUT 1 Video: BNC Audio: RCA
* S-VIDEO INPUT (4-pin mini DIN)
COMPOSITE * VIDEO INPUT 2 Video: BNC Audio: RCA
MAIN POWER switch
RS-232C (D-sub 9-pin) Use when controlling the projector from your personal computer.
MOUSE TERMINAL Use when operating your personal computer with the wireless mouse remote control. Left Terminal: D-sub 9-pin (for IBM/Mac) Right Terminal: 9-pin mini DIN (for NEC in JAPAN)
WIRED REMOTE CONTROL INPUT (3.5 mm Mono Minijack)
COMPUTER AUDIO INPUT (3.5 mm Stereo Minijack)
AUDIO OUTPUT: RCA
DC 5V1A OUTPUT
AC INLET
COMPUTER RGB INPUT 1 connector (HD-15)
Filter ON/OFF switch
COMPUTER RGB INPUT 2: BNC (R, G, B, H(C)-SYNC, V-SYNC)
* COMPOSITE VIDEO OUTPUT: BNC
COMPUTER RGB OUTPUT connector (HD-15)

Notes:

- The DC 5V OUTPUT jack cannot supply a current of more than IA.
- When connecting a Macintosh Series computer that outputs C-SYNC, connect the cable to the COMPUTER RGB 2 INPUT H-SYNCinputterminal.

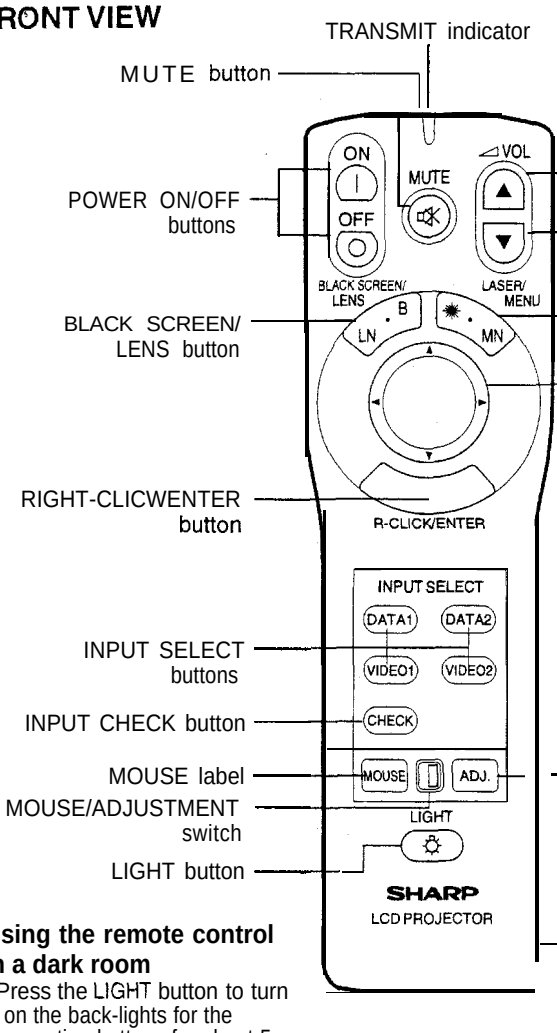
Operating the Wireless Mouse Remote Control

The functions of your personal computer's mouse have been built into the remote control enabling you to operate your projector and personal computer with only the remote control.

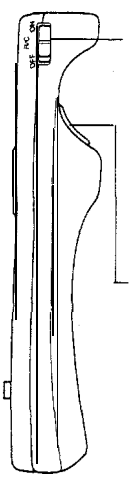
1. Slide the MAIN POWER switch on the side of the unit on.
2. Press the POWER ON button on the front panel of the remote control to turn the projector power on.
3. When using the remote control as a wireless mouse, move the MOUSE/ADJUSTMENT sliding switch to the MOUSE position. When using the remote control to operate the projector, move the MOUSE/ADJUSTMENT sliding switch to the ADJ. position. To activate the remote control key back-light feature, press the LIGHT button on the remote control. The colours of the buttons will change as shown in the table at the bottom of this page.

Wireless Mouse Remote Control

FRONT VIEW



SIDE VIEW


MAIN POWER switch of remote control
Note:
When transporting the remote control, turn off the MAIN POWER switch to avoid draining the batteries.
LEFT-CLICK button

Remote control handling precautions

- The laser beam used in this product is harmless when directed onto the skin, however please be careful not to project the beam directly into the eyes. Do not stars into the beam using an optical instrument.
- Do not expose the remote control to shocks, liquids or high humidity.
  The remote control-may not operate normally if exposed to direct sunlight or other intense light sources. Should this happen, &position the light source or the LCD Projector.

Using the remote control in a dark room

- Press the LIGHT button to turn on the back-lights for the operation buttons for about 5 seconds. The back-light colours are explained in the table to the right.

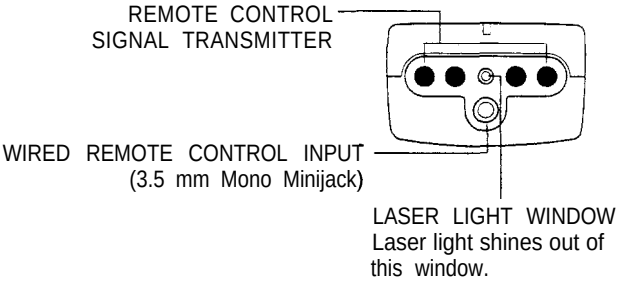
Note:

- If the MAIN POWER switch on the remote control is left on for more than 10 minutes without operation, the power will automatically turn off. To turn the power back on, press any button on the remote control for at least one second.

When you change the setting of the MOUSE/ADJUSTMENT switch, the functions of certain buttons on the remote control change. You can tell which function the button currently possesses by the colour of its back-light display.

Button name	Position of MOUSE/ADJUSTMENT switch	
	MOUSE	ADJ.
LASER POINTER/MENU	LASER POINTER (GREEN)	MENU (RED)
RIGHT-CLICWENTER	RIGHT-CLICK (GREEN)	ENTER (RED)
MOUSE/ADJUSTMENT	MOUSE (NOT LIT)	ADJ.◄/►,▼/▲ (NOT LIT)
LEFT-CLICK	ON (NOT LIT)	—
BLACK SCREEN/LENS	BLACK SCREEN (GREEN)	LENS (RED)
POWER ON/OFF	ON (RED)	
VOLUME UP-DOWN		
MUTE		
VIDEO 1		
VIDEO 2		
DATA 1		
DATA 2		
INPUT CHECK		

TOP VIEW

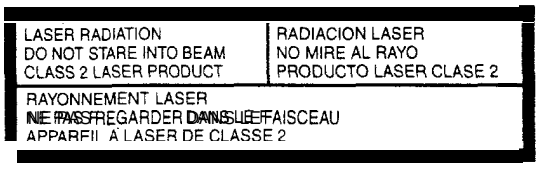


Using the optional cable with the remote control

- When the remote control cannot be used due to the range or positioning of the projector (rear projection, etc.), connect the optional cable from the Wired Remote Control Input jack on the remote control to the Wired Remote Input on the side of the projector.

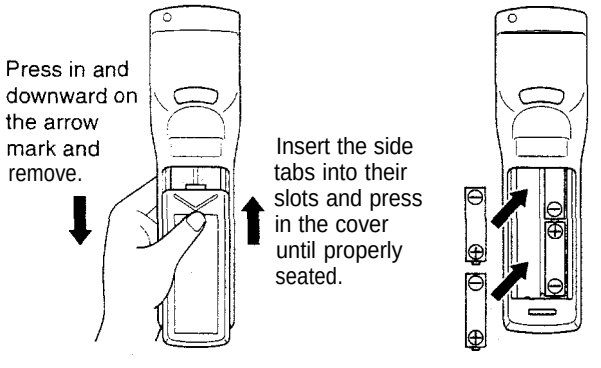
Note:

- The signal transmitter does not function when the optional cable is connected to the remote control.



The laser pointer on the remote control emits a laser beam from the laser light window shown in the figure to the left. The laser emitted is a class II laser; therefore, do not look into the laser window or shine the laser beam on yourself or other people. The two marks to the left are the caution labels for the laser beam.
Always use the laser pointer at temperatures between +5°C and +40°C.

REAR VIEW


Press in and downward on the arrow mark and remove.
Insert the side tabs into their slots and press in the cover until properly seated.

Inserting the Batteries

Remove the battery cover as shown and insert four AA size batteries making sure their polarities match the (+) and (–) marks inside the battery compartment.

Notes:

Incorrect use of batteries may cause them to leak or burst.

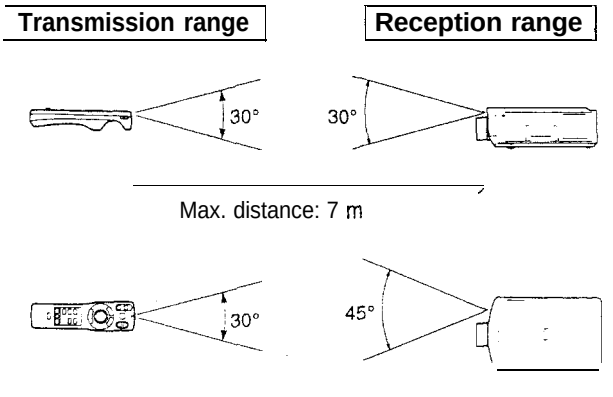
- Insert the batteries with the (+) and (–) polarities as indicated.
- Remove the batteries if the remote control will not be operated for an extended period of time.
- Maintain the batteries in a clean condition.
- Do not mix different brands of batteries. The life expectancy of the new batteries will be shortened and the old batteries may leak.
- When the batteries have been used up, remove them immediately to prevent leakage and damage. Leaked battery fluid may irritate the skin. Remove any battery fluid by wiping with a cloth.
- Due to storage conditions and the shelf life of the supplied batteries, they may run out after a short time. If so, replace them with new batteries as soon as possible.

Remote control positioning

Use the remote control as shown in the figures on the left.

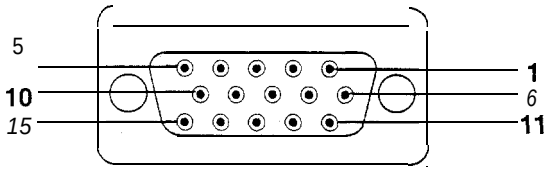
Note:

- The signal from the remote control can be reflected off the screen for easy operation. However, the effective distance of the signal may differ due to the screen material.



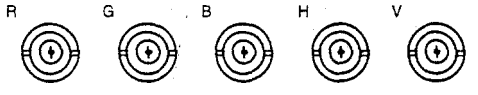
Connection Pin Assignmetns

Analog RGB 1 Signal Input and Analog RGB 1 and 2 Output Terminal : 15-pin mini D-sub female connector



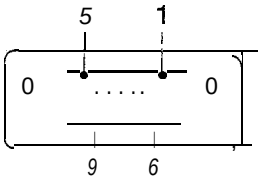
Computer Input
Analog
1. Video input (red)
2. Video input (green)
3. Video input (blue)
4. Reserve input 1
5. Composite sync (Mac only)
6. Earth (red)
7. Earth (green)
8. Earth (blue)
9. Not connected
10. GND
11. GND
12. Reserve input 2
13. Horizontal sync signal
14. Vertical sync signal
15. Reserve input 3

Analog RGB 2 Signal Input : 5 BNC



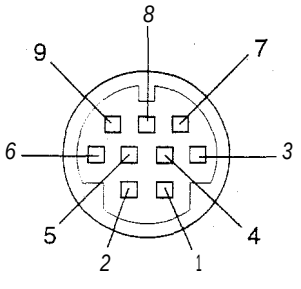
Computer Input
Analog
R Video input (red)
G Video input (green)
B Video input (blue)
H Horizontal sync signal, Mac C-sync signal
V Vertical sync signal

Mouse Input Terminal (for IBM/Mac) : 9-pin D-sub female connector



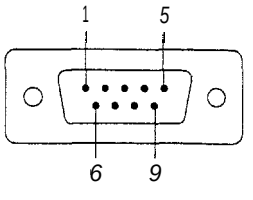
Pin No.	Signal	Name	I/O	Reference
1	CD	Carrier Detect	Input	Connected to internal circuit
2	RD	Receive Data	Input	Connected to internal circuit
3	SD	Send Data	output	Connected to internal circuit
4	ER	Equipment Ready	output	Connected to internal circuit
5	SG	Signal Ground		Connected to internal circuit
6	DR	Data Set Ready	output	Not connected
7	RS	Request to Send	output	Connected to internal circuit
8	CS	Clear to Send	Input	Connected to internal circuit
9	CI	Ring Indicator	Input	Connected to internal circuit

Mouse Input Terminal (for NEC PC98 series for Japan) : 9-pin mini DIN connector



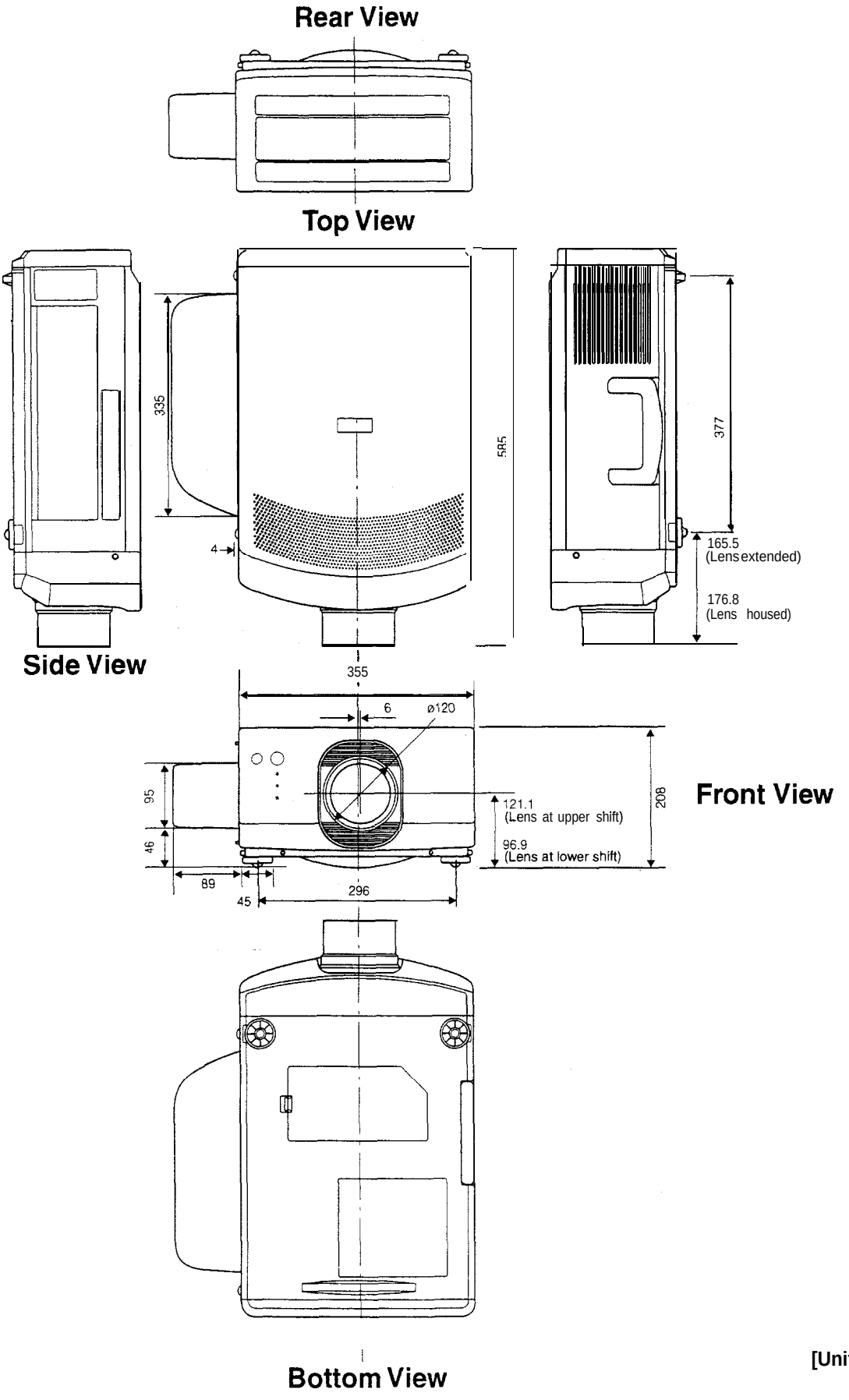
Pin No.	Signal	I/O	Reference
1	+5V	Input	Computer output
2	XA	Input	Computer output
3	XB	Input	Computer output
4	YA	Input	Computer output
5	YB	Input	Computer output
6	LEFT	Input	Computer output
7	NC	Input	Not connected
8	RIGHT	Input	Computer output
9	GND		Computer output

RS-232C terminal : 9-pin D-sub male connector



Pin No.	Signal	Name	I/O	Reference
1	CD			Not connected
2	RD	Receive Data	Input	Connected to internal circuit
3	SD	Send Data	output	Connected to internal circuit
4	ER			Not connected
5	SG	Signal Ground		Connected to internal circuit
6	DR	Data Set Ready	output	Not connected
7	RS	Request to Send	output	Connected to internal circuit
8	CS			Not connected
9	CI			Not connected

Dimensions



[Units: mm]

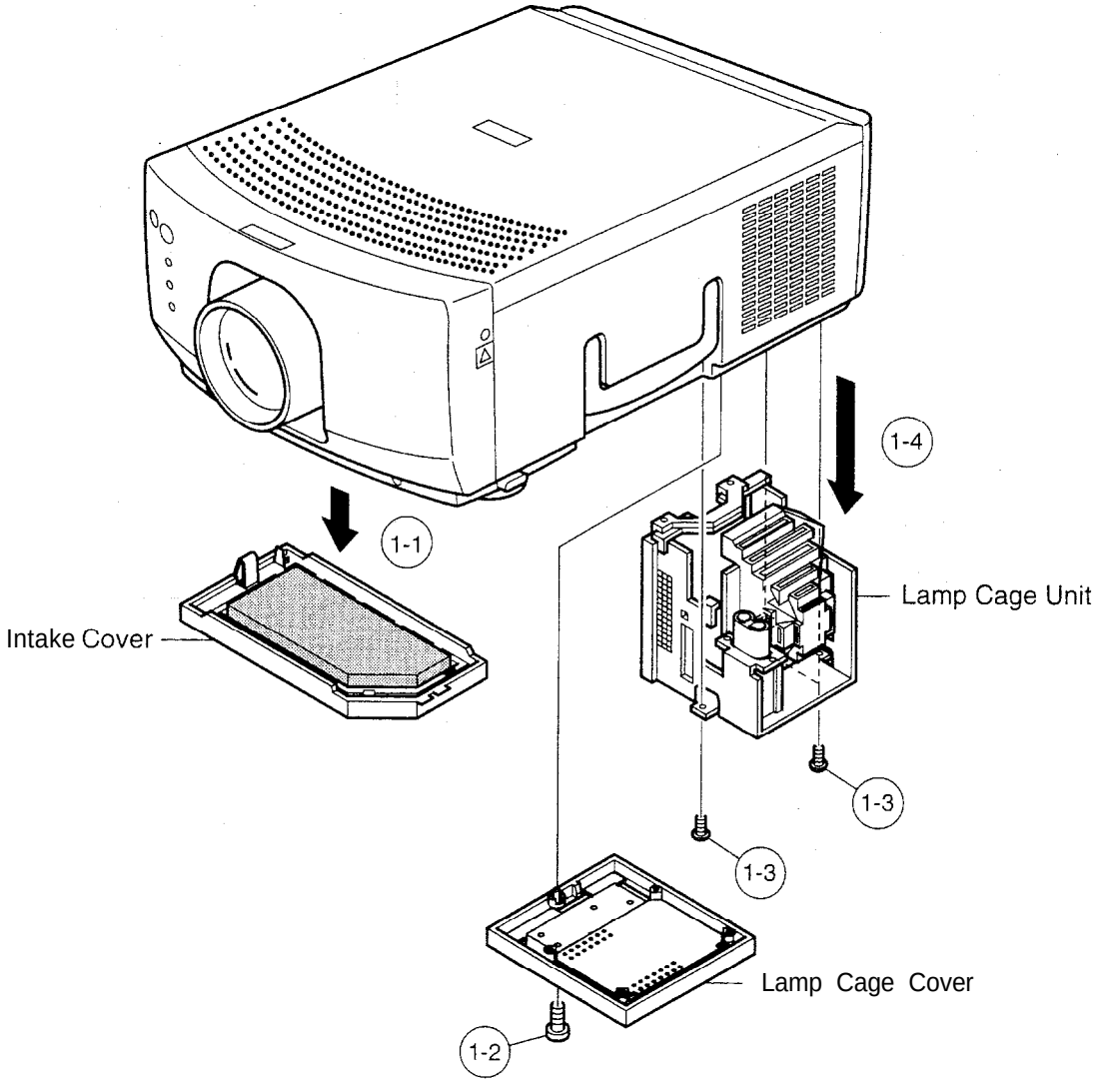
REMOVING OF MAJOR PARTS

1. Removing the Lamp cage unit and Intake cover

1-1. Remove the intake cover.
1-2. Remove the screws and detach the lamp cage cover,
I-3. Remove the three screws off the lamp cage unit.
I-4. Pull out the lamp cage unit.

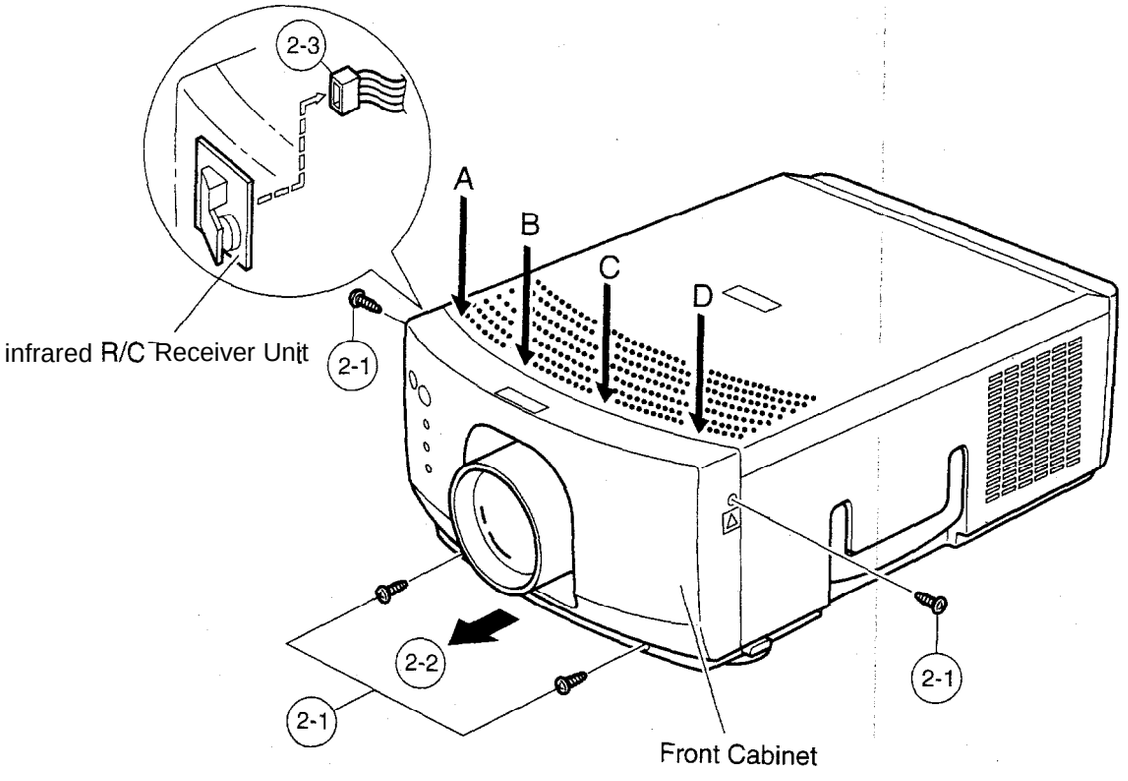
Notes:

- Before the replacement, turn off the projector's power button, make sure the cooling fan comes to a complete stop, and unplug the power cord.
- The lamp may be still very hot. Turn off the power button, unplug the power cord and wait for at least 1 hour before staring the job.
- In fitting the lamp cage unit back into position, make sure the connector is at the top position.



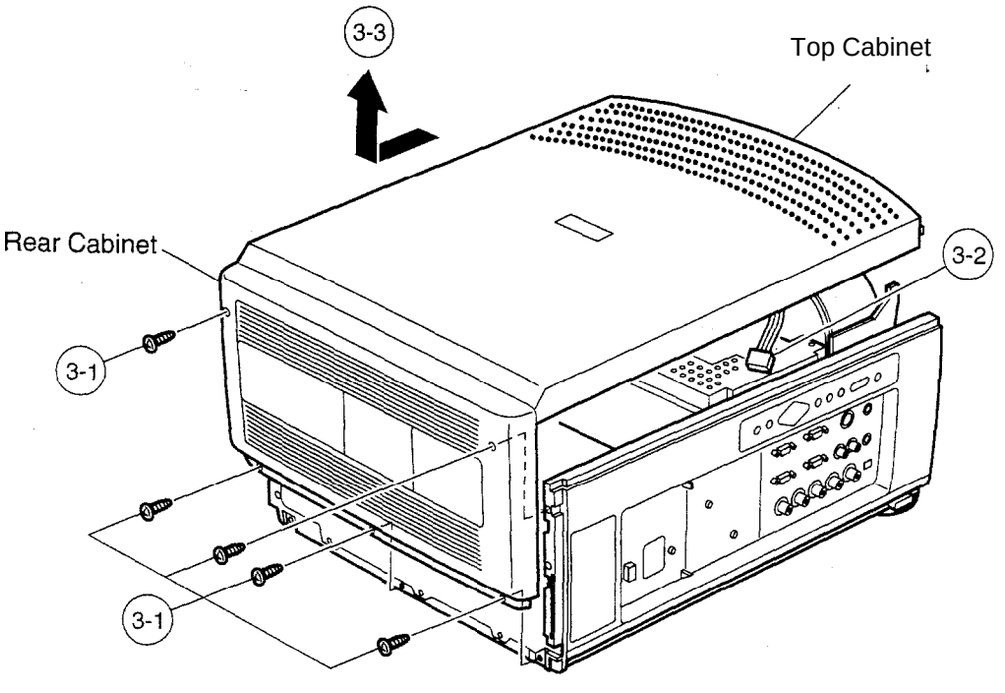
2. Removing the front cabinet

2-1. Remove the four right and left screws from the bottom of the front cabinet.
2-2. Gently press down on the hooks A, B, C and D of the top cabinet to unhook; the front cabinet. Detach the front cabinet.
2-3. Disconnect the remote control connector.



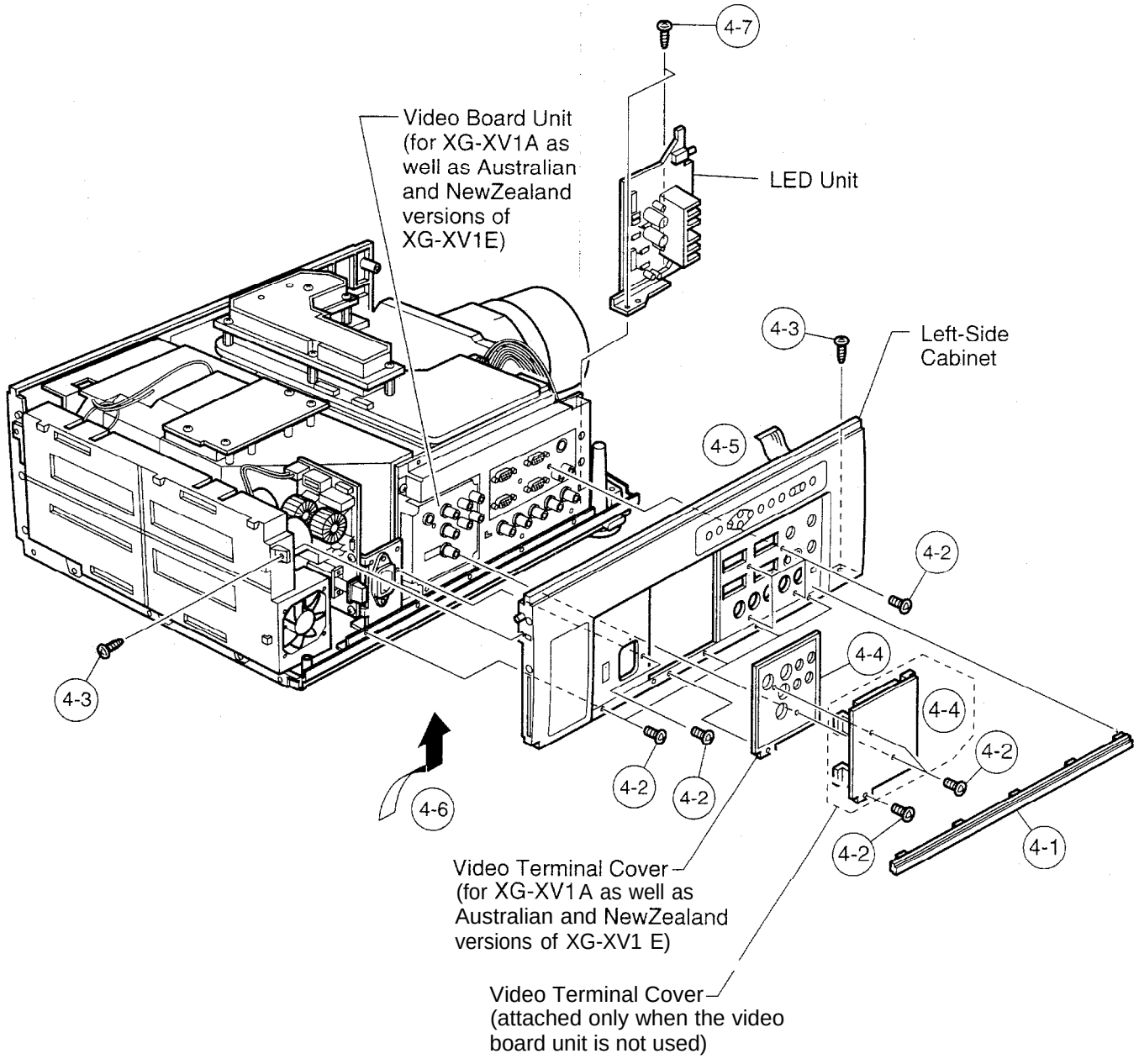
3. Removing the top and rear cabinets

3-1. Remove the five screws from the top and bottom of the rear cabinet.
3-2. Disconnect the speaker connector.
3-3. Slide back the top cabinet to separate the top and rear cabinets.



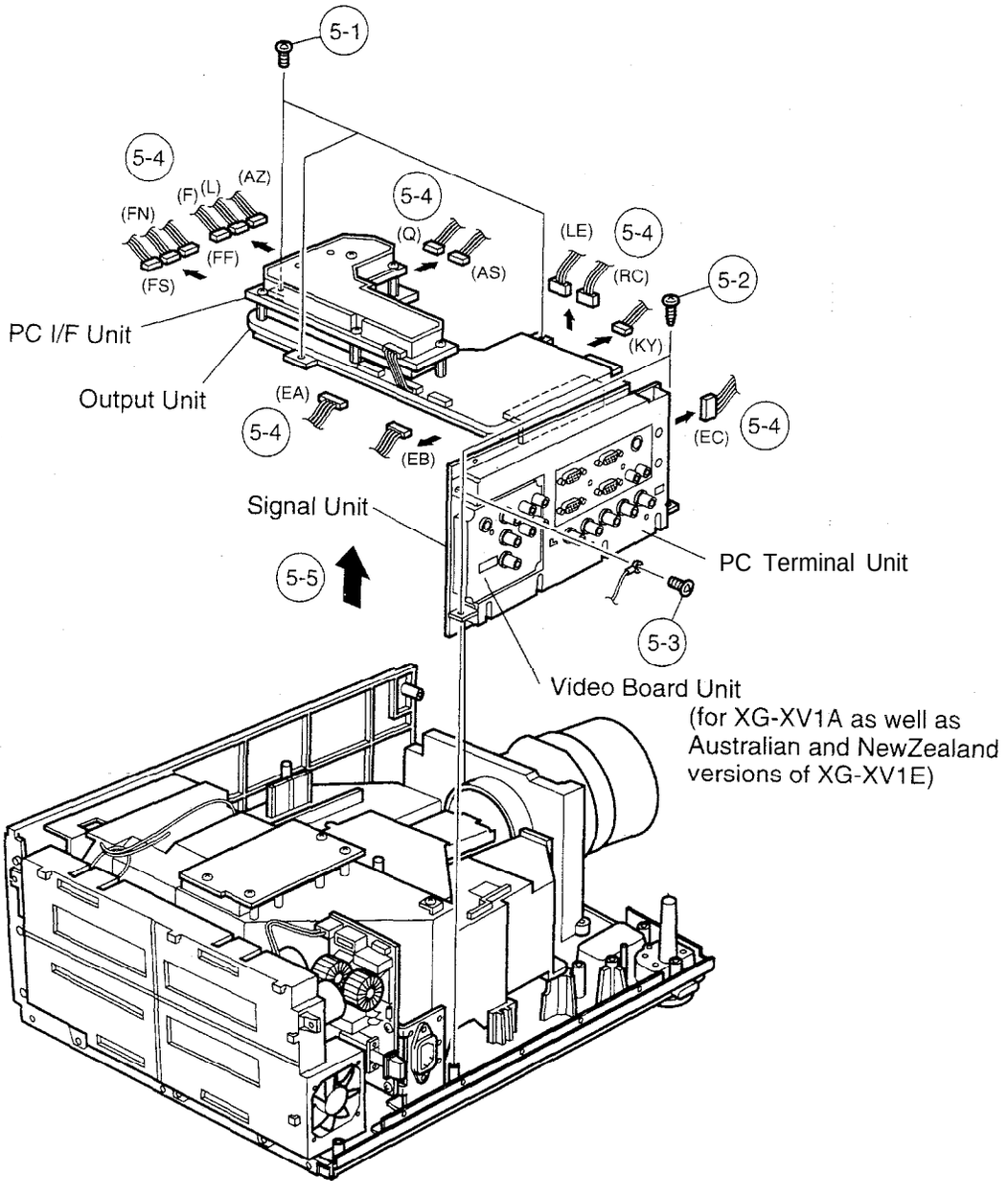
4. Removing the left side cabinet

4-1. Put a bladed screwdriver in the rightmost hole of the screws cover. Pull and unlock the right end of the screws cover, and pull and detach the entire screws cover.
4-2. Remove the twelve side screws.
4-3. Remove the two screws off the side cabinet.
4-4. Disconnect the video terminal cover.
4-5. Disconnect the membrane switch connector.
4-6. Pull down and detach the left side cabinet.
4-7. Remove the two screws off the LED PWB assembly.



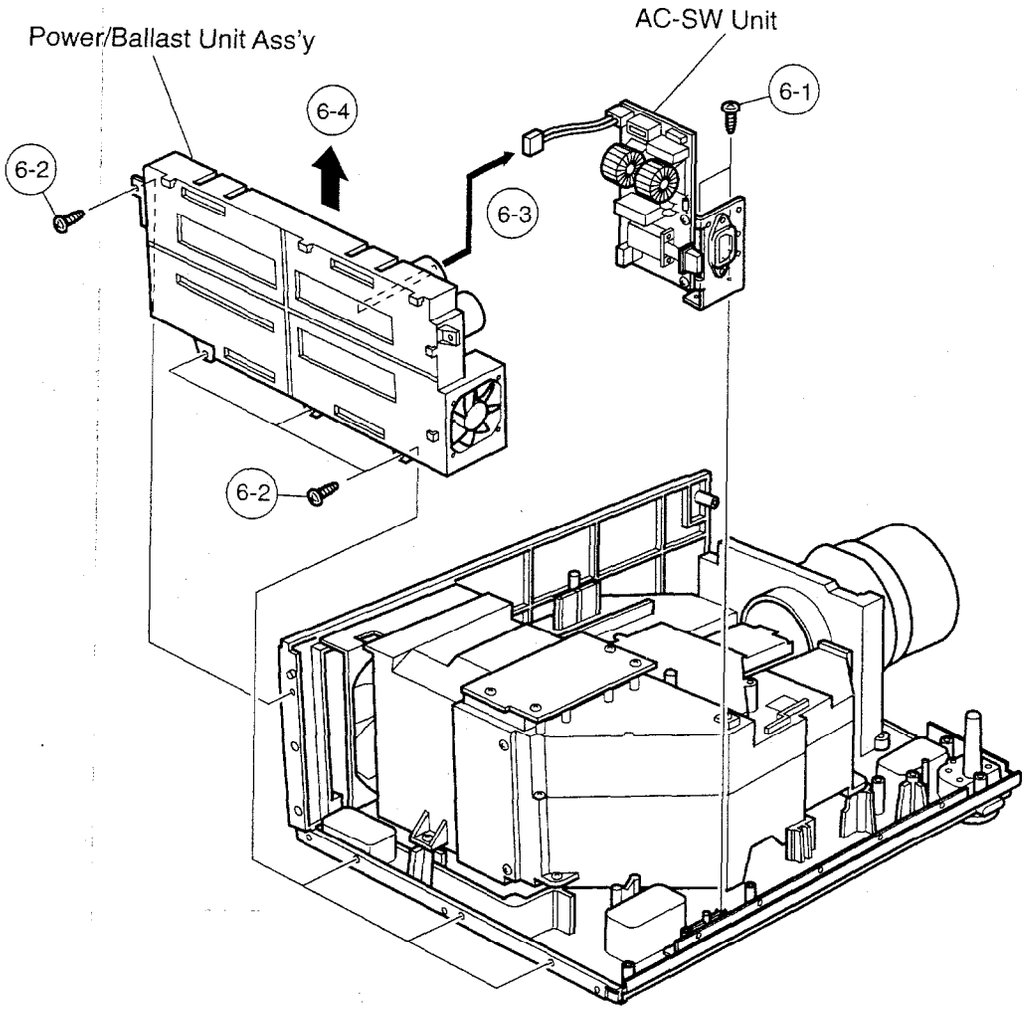
5. Disconnecting the signal and output PWBs

5-1. Remove the three screws off the optical mechanism assembly.
5-2. Remove the two screws off the bottom cabinet.
5-3. Remove the screw off the signal PWB assembly.
5-4. Disconnect the connectors of the signal PWB and output PWB assemblies.
5-5. Take up and away the PWB assemblies.



6. Removing the power supply and ballast PWBs

6-1. Remove the two screws off the AC-SW Unit on the bottom cabinet.
6-2. Remove the four screws off the power/ballast holder (located behind)
6-3. Disconnectithe connectors.
6-4. Take up and away the PWBs.

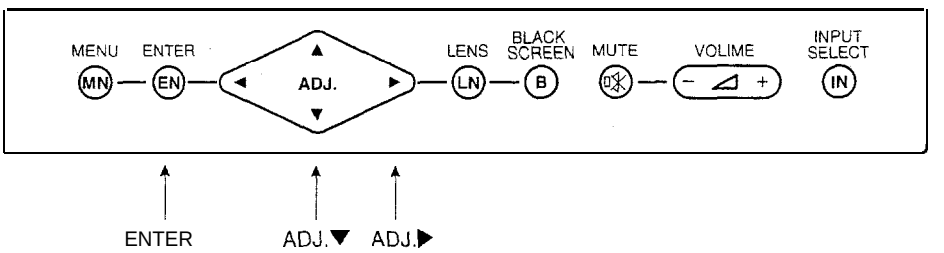


RESETTING THE LAMP OPERATING HOUR COUNTER

The unit is designed to keep its power off when the lamp has been used for 1900 and 2000 hours. This is to protect the lamp fixture. Replace the lamp with new one and take the following resetting procedure.

Resetting the lamp operating hour counter

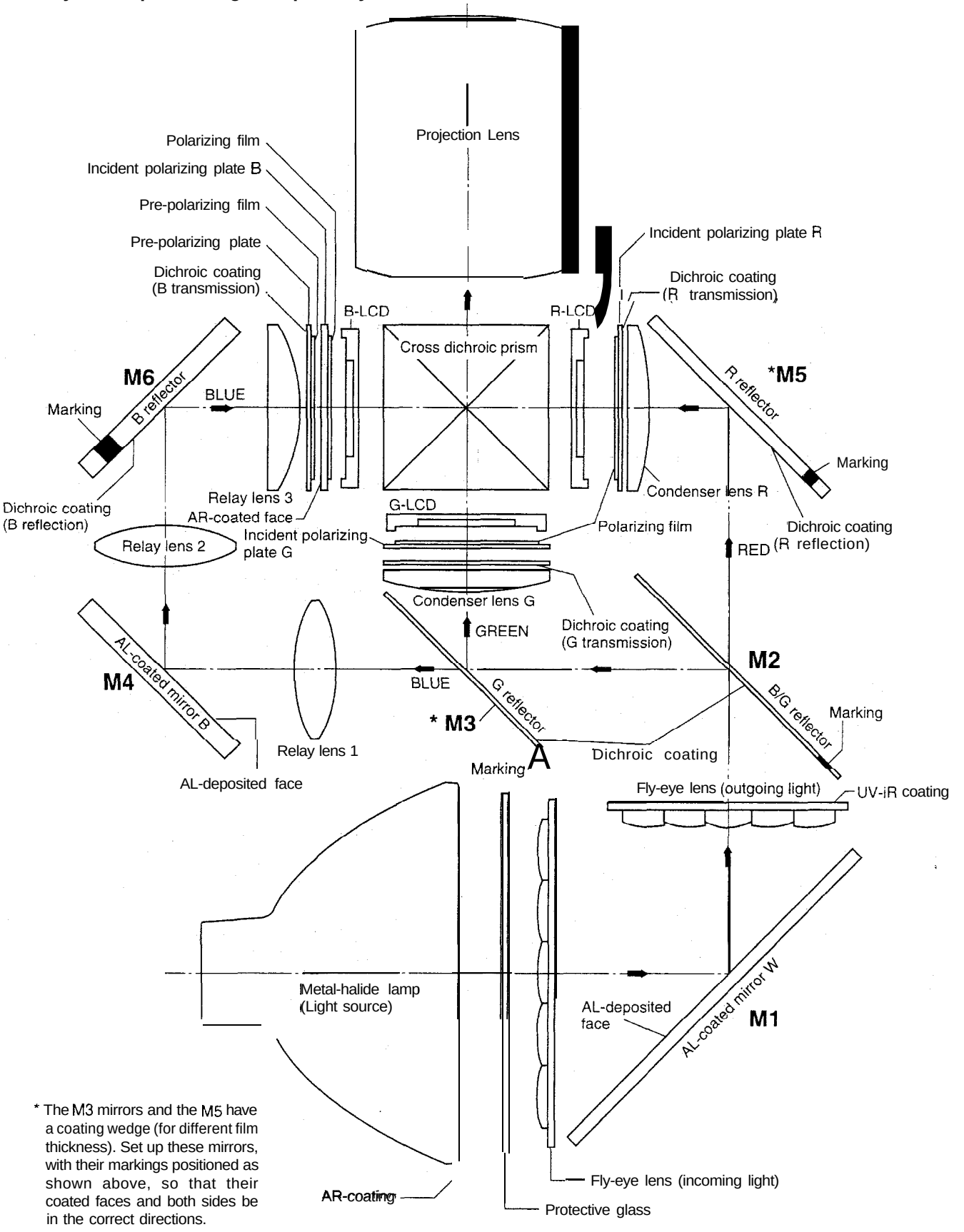
1. Hold down the “ENTER”, “ADJ.▼” and “ADJ.▶” buttons on the unit, and turn on the main power switch (located above the AC inlet).
2. Now the unit is turned on and the lamp operating hour counter is reset to zero. “000H” appears on the screen.



THE OPTICAL UNIT OUTLINE

Layout of the optical system

Note: Layout for positioning the optical system.



* The M3 mirrors and the M5 have a coating wedge (for different film thickness). Set up these mirrors, with their markings positioned as shown above, so that their coated faces and both sides be in the correct directions.

CQNVERGENCE AND FOCUS ADJUSTMENT

- **Start the convergence and focus adjustments with the top cabinet and the signal shield removed but the power on. Use the remote control to adjust the image. Take the following procedures.**

1. Focusing the projection lens

(A) **Replacing all the 3 LCD panels**

1. Before replacing all the 3 LCD panels, project an image on the screen and bring it into focus.
2. Replace the panels with new ones. But until the focus has been completely readjusted, be careful not to change the distance between the set and the screen, nor to move the projection lens focus and zoom rings.

(If the focus is readjusted with a different positional relation, the relation between the projection distance and the screen size is affected. In other words, a short-distance image (40 WIDE, for example) may get out of the focus range, or a long-distance image (300 WIDE, for example) may come out of focus.)

(B) Replacing 1 or 2 of the 3 LCD panels

1. In adjusting the focus after replacement of one or two LCD panels, project an image on the screen and turn the projection lens focus ring to get the non-replaced LCD panel into focus.
2. But until the focus has been completely adjusted for the new LCD panels, be careful not to change the distance between the set and the screen, nor to move the projection lens focus and zoom rings.
   (If the distance has been changed or the projection lens readjusted, repeat the above steps 1 and 2.)

2. Adjusting the G-LCD panel

(A) Focus adjustment. (Make this adjustment on the white-only screen.)

1. Right-and-left focus adjustment (θY direction) .
   Loosen the lock screws "b" and "c" and insert the eccentric screwdriver into the notch and hole "b" or "c". Turn the screwdriver until the right and left halves on the screen get into focus.
   (First get the right and left halves in balance. Then improve the accuracy while making the adjustment 2 below.)
2. Top-center-bottom focus adjustment (θX and Z directions).
   Loosen the lock screws “a” and "c" and insert the eccentric screwdriver into the notch and hole “a” and "c". Turn the screwdriver until the top, center and bottom on the screen get into focus. In adjusting this top-to-bottom focus, temporarily tighten the lock screw "b" to fix the θY direction adjustment.
3. Repeat the above steps 1 and 2 to finely adjust the focus. Finally tighten up all the lock screws.

Notes :

① Carefully proceed with the focus adjustment because the adjusting directions are correlated.
② In adjusting the convergence and focus, do not move the projection lens zoom and focus rings until the end of all the adjustments.

(B) Convergence adjustment

- The G-LCD panel has no convergence adjustment mechanism. Use this panel as convergence adjustment reference.

3. B-LCD panel adjustment (the same for the R-LCD panel)

(A) Focus adjustment

- Take the same procedure as for the G-LCD panel focus adjustment. Note that the adjustment range is small in the Z direction. If the convergence is quite different between the B-LCD and G-LCD panels, roughly adjust the convergence first and then the focus.

(B) Convergence adjustment

- Use a crosshatch pattern signal for this adjustment.
  Make the adjustment just for the G-colour and the relevant colour.
  (1) Loosen the convergence lock screw "d".
  (2) With the G-LCD panel’s screen center as reference, adjust the B-LCD panel in the X, Y and θZ directions.
  (3) Finally tighten up the convergence lock screw "d".

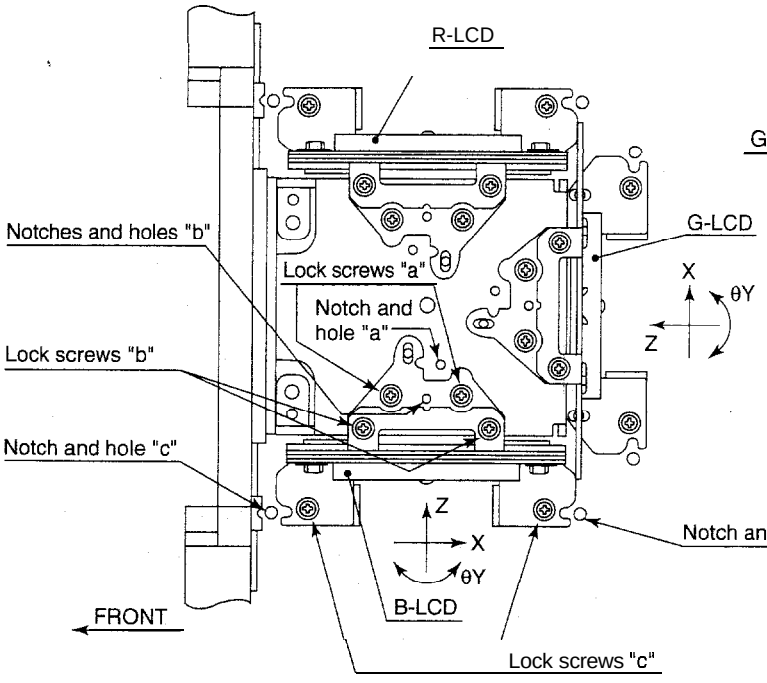
Notes :

① The eccentric cam is used for convergence adjustment. This means that the cam's turning and the linear movement are not always uniform.

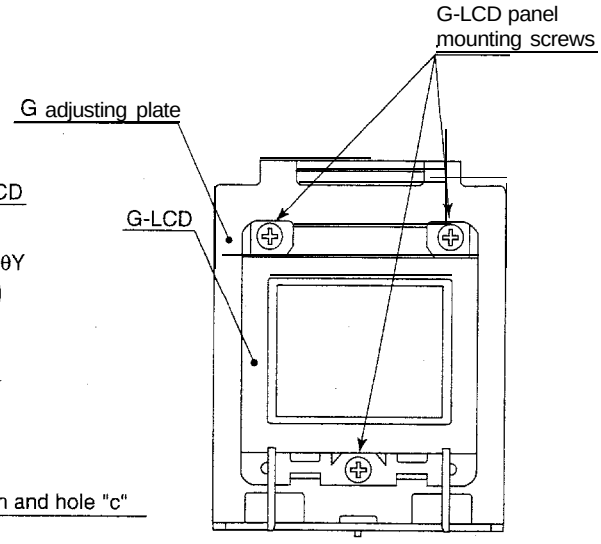
② This model is not equipped with the LCD image adjustment mechanism. This is because the dichroic prism is used for image formation. When the LCD panels all get into the best focus, the images are almost completely converged.

Convergence and Focus Adjustments Mechanism

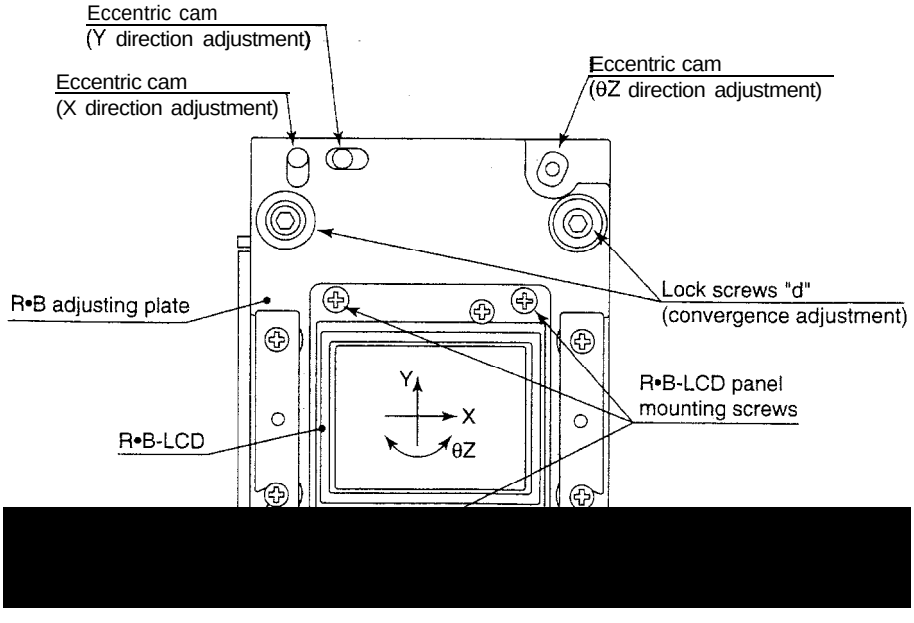
TOP VIEW



SIDE VIEW



SIDE VIEW



Convergence and Focus Adjustments at a Glance

Adjustment directions

Adiustment	Direction	Definition	Direction of LCD panel
Convergence	X direction		LCD right and left
	Y direction		LCD top and bottom
	θZ direction	Rotation around Z axis	LCD turnina axis
Focus	Z direction		LCD optical axis
	θX direction	Rotation around X axis	LCD top-to-bottom flapping
	θY direction	Rotation around Y axis	LCD right-to-left flapping

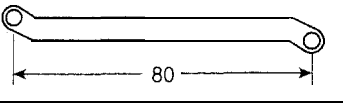
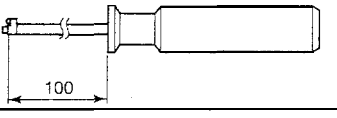
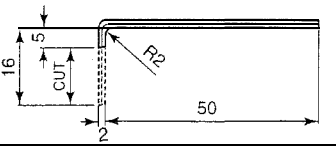
Convergence and Focus Adjustment for the XG-XV1E/A Optical Mechanism

Colour	Adjustment	Direction	Movement	Position	Adjusting tool	Lock screw	Tightening tool
RIB colours	Convergence	X direction	±1mm	Eccentric cam	Eccentric cam adjusting wrench	d	Hex wrench
		Y direction	±1mm	Eccentric cam	Eccentric cam adjusting wrench	d	Hex wrench
		θZ direction	±2°	Eccentric cam	Eccentric cam adjusting wrench	d	Hex wrench
	Focus	Z direction	±1.65mm	Notch and hole "a" & "c"	Eccentric screwdriver,	a, c	Phillips screwdriver
		θX direction	±2°	Notch and hole "a" & "c"		a, c	
		θY direction	±2°	Notch and hole "b" & "c"		b, c	
G colour	Focus	Z direction	±0.5mm	Same as for R and B colours			
		θX direction	±2°				
		θY direction	±2°				

Focus Adjustments the Other Way

Lock screw	Position	Related direction
a	Notch and hole "a"	Z and θX directions
b	Notch and hole "b"	θY direction
c	Notch and hole "c"	Z, θX and θY directions

Convergence and Focus Adjusting and Tightening Tools

Tool	Specific or General	Tool code	Configuration
Eccentric cam adjusting wrench	Specific	9DASPN-XGNV1U	
Eccentric screwdriver	Specific	9EQDRiVER-NV1A	
Hex wrench	General (redesigned)	9EQLNC-XGNV1U	
Phillips screwdriver	General	—	For M2.6 pan-head machine screw

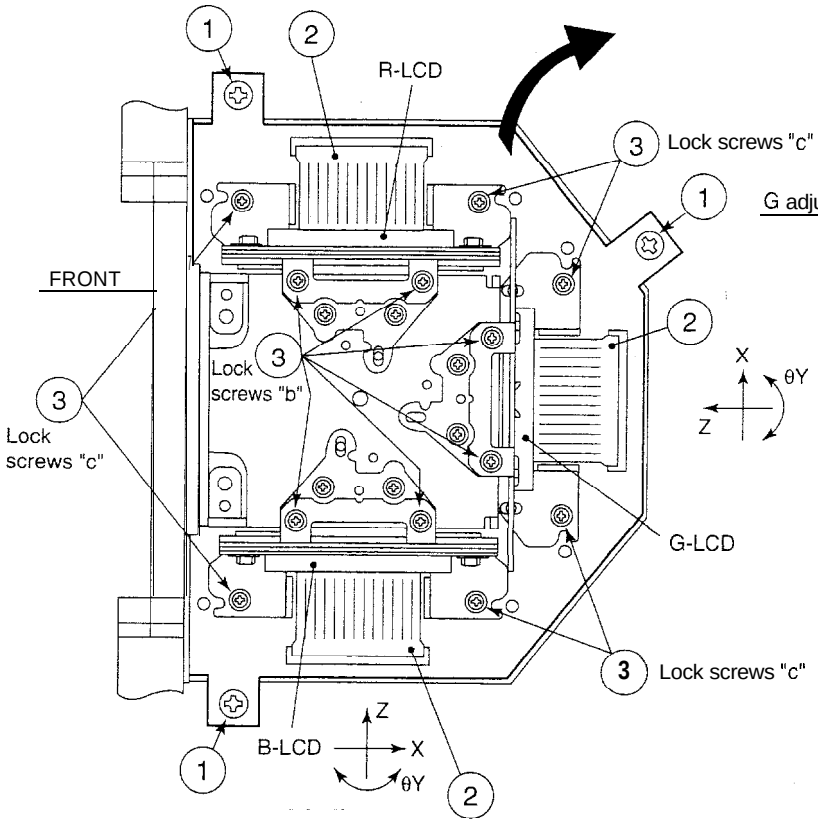
Replacing the LCDs

With the top cabinet removed

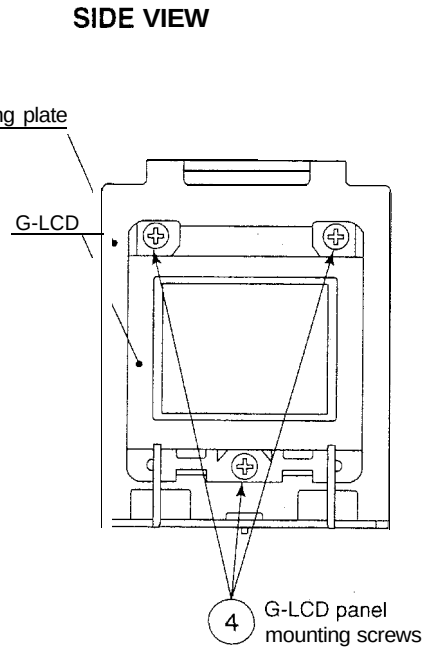
(1) Remove three screws off the output shield.
(2) Disconnect the LCD flat cable from the output PWB connector.
(3) Remove the lock screws "b" and "c". Detach the R/B adjusting plate or the G adjusting plate together with the LCD panel.
(4) Separate the LCD panel from the adjusting plate.
(5) Mount a new LCD panel in the reverse order of the above steps (1), (2), (3) and (4).

* Readjust the convergence and focus. Note that the G LCD panel needs no convergence adjustment and has a small adjustment range in the Z direction.

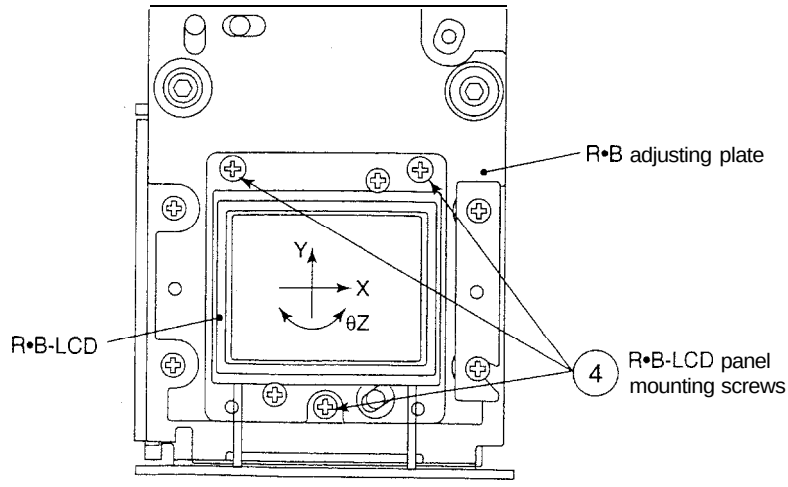
TOP VIEW



SIDE VIEW



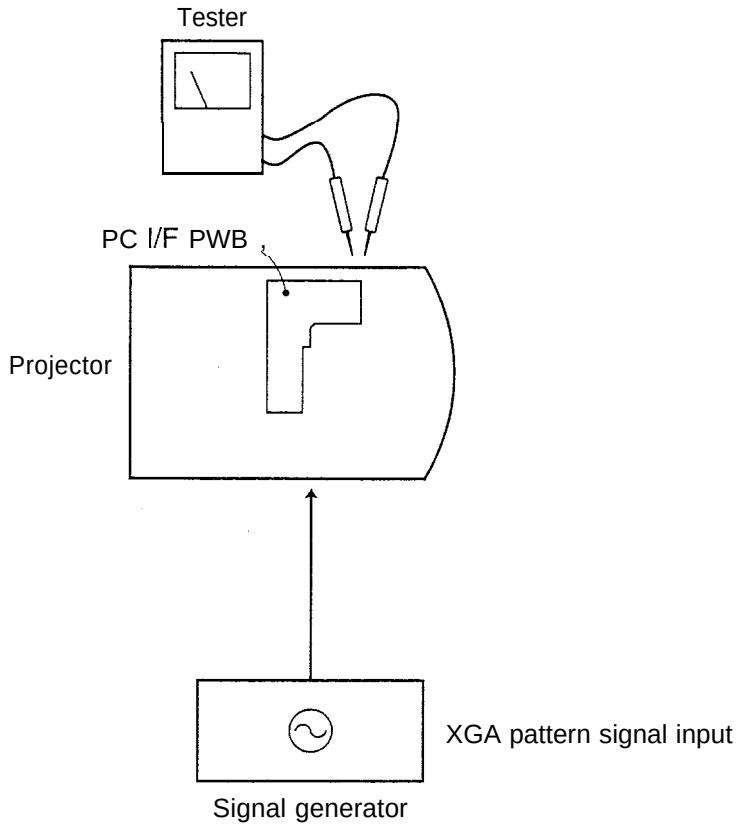
SIDE VIEW



VOLTAGE MEASUREMENT

Measuring procedure: PC I/F Unit (CPCi-0023CE01)

1. Feed the XGA pattern signal from the signal generator.
2. Using the tester, measure the voltage at each test point on the PC I/F PWB.

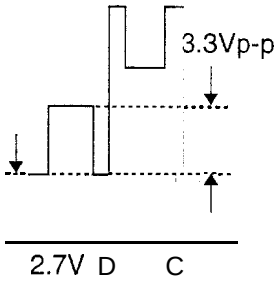
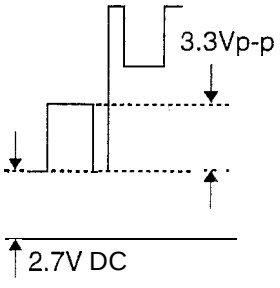


ELECTRICAL ADJUSTMENT

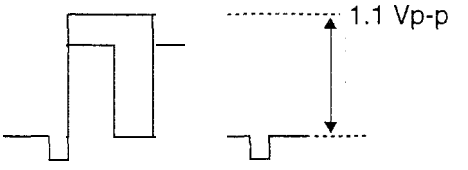
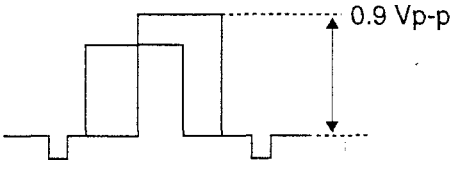
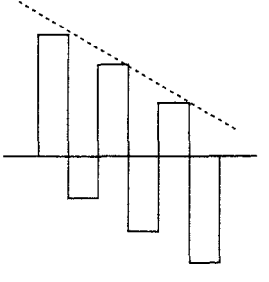
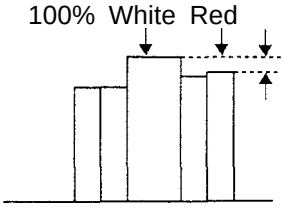
Hook up a signal generator, or a DOSV or **Mac personal computer to the projector in order to feed the signals specified in the Adjusting conditions.**

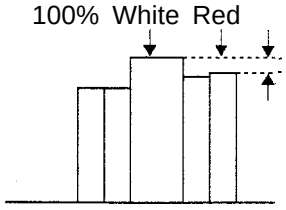
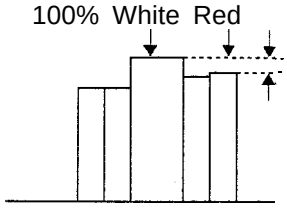
Note : All the adjusted data will be cleared by making the "FACTORY SETTING 1" or "FACTORY SETTING 2". Before using the previous data for adjustment, write down the modified data on a notepad or the like and then make the initialsettings.

No.	Adjusting point	Adjusting conditions	Adjusting procedure
1	**EEPROM in initialization** (Note)	1. Turn on the power (make sure the lamp lights up) and warm up the unit for 15 minutes.	• Make the following settings: Press S5001 to call up the process mode and execute S2 in the SSS menu. Now the system, with the PC board not included, is initialized. In order to make the PC board adjustments (Nos. 2, 3 and 4), execute S1. If not making those PC board adjustments, do not execute S1.
2	**PC board brightness adjustment**	1. Feed the XGA black signal. 2. Connect the oscilloscope to TP2. 3. Make the following choice:, Group : OUTPUT2 Subject : BRIGHT 4. Press the sound mute key' to cancel the colour bar test pattern that is automatically outputted.	• Adjust the signal's black level to 1.7 V DC and add 10 points to then adjusted value.
3	**PC board AD converter reference voltage adjustment**	1. Group : A/D Subject : ROS, **GOS,** BOS.	• Adjust the positive-pole voltage of C64 to 1.7 V DC. • Similarly, adjust the positive-pole voltages of C57 and C50 in the subjects GOS and BOS, respectively.
4	**PC board drive adjustment**	1. Group : A/D Subject : Set GAIN value at 163. 2. Feed the XGA and gray scale signal. 3. Connect the oscilloscope to TP1. 4. Make the following choice: Group : A/D Subject : R-D	• Make adjustment so that the white peak level of the signal becomes 3.6 V DC. At this time, make sure that the waveform is not deformed at both the black side and white side. • Similarly, make adjustment for TP2 and TP3 in the subjects G-D and f B-D, respectively.

No.	Adjusting point	Adjusting conditions	Adjusting procedure
5	**RGB 1 system black level signal amplitude**	1. Make the following choice: Group : OUTPUT 1 Subject : R1-BLK R1-GAIN (The colour bar test pattern is outputted automatically.) For green, choose the subjects G1-BLK and G1-GAIN. For black, choose the subjects B1-BLK and B1-GAIN. 2. Connect the oscilloscope to pin (5)(TP1101) of SC1101 for red. Pin (5)(TP1201) of SC1201 for green Pin (5)(TP1301) of SC1301 for blue	• Choose the subject R1-BLK and adjust the black peak level to 2.7 ±0.1V DC using the membrane switch or the remote control button. • Next, choose the subject R1-GAIN and adjust the signal amplitude to 3.3 ±0.1 Vp-p. • Make the same adjustment for green and blue. 
6	**RGB 2 system black level signal amplitude**	1. Make the following choice: Group : OUTPUT 2 Subject : R2-BLK(R), R2-GAIN For green, choose the subjects G2-BLK and G2-GAIN. For black, choose the subjects B2-BLK and B2-GAIN. 2. Connect the oscilloscope to pin (6)(TP1102) of SC1101 for red. Pin (6)(TP1202) of SC1201 for green Pin (6)(TP1302) of SC1301 for blue	• Choose the subject R2-BLK and adjust the black peak level to 2.7 ±0.1V DC using the membrane switch or the remote control button. • Next, choose the subject R2-GAIN and adjust the signal amplitude to 3.3 ±0.1 Vp-p.  • Make the same adjustment for green and blue. • Feed the XGA gradation pattern single-colour signal and make sure that there is no difference in brightness between adjacent vertical lines. If there is a difference, make fine adjustment by choosing the following subjects. R2-GAIN for red G2-GAIN for green B2-GAIN for blue.
7	**Sample-and-hold pulse phase**	1. Feed the SXGA mode black signal. 2. Make the following choice: Group : OUTPUT 3 Subject : SH-PHASE	• Using the membrane switch or the remote control button, make such adjustment that the characters on the adjustment menu are least blurry or overlapped. (Make adjustment at the moment when the group name "OUTPUT3" appears and the subject name "SH-PHASE" is not yet indicated.)

No.	Adjusting point	Adjusting conditions	Adjusting procedure
8	**RGB counter-voltage adjustment**	1. Feed the black-and-red (25%) stripe signal (XGA). If such a pattern signal is not available, select the horizontal stripe signal from the desktop pattern menu. 2. Make the following choice: Group : OUTPUT 3 Subject : RC (R)	• Using the membrane switch or the remote control button, adjust the data in order to minimize the flicker. • Make the same adjustment for BC (B) and GC (G).
9	**RGB gradation regeneration adjustment**	1. Feed the XGA green-only gradation pattern (more than 16 steps) signal. Group : OUTPUT 1 Subject : GI-GAIN	• Adjust the GI-GAIN data until the first and second gradations can be slightly recognized. (First gradually raise the GI-GAIN level until the gradation gets recognized, and then adjust the level by lowering it again.)
10	**RGB white balance**	1. Feed the XGA gray scale signal. Group : OUTPUT 1 Subject : RI-BLK R1-GAIN (R) BI-BLK B1-GAIN (B)	• Choose the subjects R1-BLK and BI-BLK and adjust the black balance of the gradation. Choose the subjects RI-GAIN and BI-GAIN and adjust the gray-to-while balance (so that the entire screen looks colourless).
11	**NTSC 4fsc**	1. Choose the group VIDEO 1 to keep the unit without signal. 2. Select the colour system into N358. 3. Connect the frequency counter between TP401 and GND.	• Turn C450 to have the frequency counter read 14.31818 MHz ±50 Hz.
12	**PAL 4fsc**	1. Choose the group VIDEO 1 to keep the unit without signal. 2. Select the colour system into PAL. 3. Connect the frequency counter between TP401 and GND.	• Turn C446 to have the frequency counter read 17.734475 MHz ±50 Hz.
13	**Horizontal center**	1. Feed the NTSC monoscope pattern signal. Group : VIDEO 1 Subject : NTSC-H	* Using the membrane switch or the remote control button, adjust the data to have the same overscan.

No.	Adjusting point	Adjusting conditions	Adjusting procedure
14	**Video picture adjustment**	1. Make the following choice: Group : VIDEO 1 Subject : PICTURE 2. Connect the oscilloscope between pin (2) of P801 and GND.	• Using the membrane switch or the remote control button, adjust the black-to-white (100%) level difference to 1 .1±0.02 Vp-p. 
15	**Video AGC**	1. Feed the NTSC split colour bar signal. Group : VIDEO 1 Subject : AGC 2. Connect the oscilloscope between pin (2) of P801 and GND.	• Using the membrane switch or the remote control button, adjust the black-to-white (100%) level difference to 0.9 ±0.02 Vpp. 
16	**Video brightness adjustment**	1. Feed the NTSC black signal. Group : VIDEO 1 Subject : BRIGHT 2. Press the membrane switch or the remote control's mute button (to set the gamma correction to the process setting).	• Using the membrane switch or the remote control button, decrease 2 points from the level where the black signal becomes bit-less (dotted).
17	**Tint**	1. Feed the NTSC colour bar signal. Group : VIDEO 1 Subject : TINT 2. Connect the oscilloscope to pin (5) of P801.	• Using the membrane switch or the remote control button, adjust the data to have the -(B-Y) waveform downhill straight. 
18	**NTSC colour saturation level**	1. Feed the NTSC colour bar signal. Group : VIDEO 1 Subject : N-COLOR 2. Connect the oscilloscope to pin (1) of P801.	• Using the membrane switch or the remote control button, adjust the difference between the 100% white portion and the red portion to 0.1 ±0.02 Vp-p. 

No.	Adjusting point	Adjusting conditions	Adjusting procedure
19	**PAL colour saturation level**	1. Feed the PAL colour bar signal. Group : VIDEO 1 Subject : P-COLOR 2. Connect the oscilloscope to pin (1) of P801.	• Using the membrane switch or the remote control button, adjust the difference between the 100% white portion and the red portion to 0.1 ±0.02 Vp-p. 
20	**SECAM colour saturation level**	1. Feed the SECAM colour bar signal. Group : VIDEO 1 Subject : S-COLOR 2. Connect the oscilloscope to pin (1) of P801.	• Using the membrane switch or the remote control button, adjust the data to have a level difference of 0.1 ±0.02 Vp-p between the 100% white portion and the red portion. 
21	**Video white balance**	1. Feed the NTSC mono-scope pattern signal Group : VIDEO 2 Subject : RI-GAIN BI -GAIN	• Choose the subjects RI-GAIN and BI-GAIN, and make adjustment so that the entire screen looks evenly colourless. If the black side is not properly adjusted, first readjust the black side by making the following choice: Group : OUTPUT 1 Subject : R1-BLK BI -BLK Then, make the following choice: Group : VIDEO 2 Subject : R1 -GAIN BI -GAIN Readjust the related data. Since the subjects R1-BLK and BI-BLK are common for the RGB input and VIDEO input, feed the RGB signal again to adjust the white balance.
22	**Colour system performance check**	1. Receive the colour bar signal.	• In the process mode, select LI . Check the colour and tint.
23	**Video system performance check**	1. Receive the monoscope pattern signal.	• In the process mode, select L2. Check the picture, brightness and sharpness.

No.	Adjusting point	Adjusting conditions	Adjusting procedure
24	Audio system performance check		• In the process mode, select L3. Check the bass, treble and balance.
25	R G B performance check	1. Receive the RGB signal.	• In the process mode, select L4. Check the picture, brightness, red, blue, clock, phase, horizontal position, and vertical position.
26	Off-timer performance check		• In the process mode, select OFF. Make sure that the off-timer starts with "5" (minutes), counts down each minute in 1 second, and turns off the set at "0".
27	Lens shift adjustment	1. Group : LENS Subject : LENS AUTO	• Adjust the lens center position (for the lens center to come to the △ mark on the front cabinet). • When the ENTER key is pressed after choosing the subject LENS AUTO, the data is fed automatically.
28	Factory settings		• Execute S4 of the group SSS to make the factory settings.

• Process adjustment mode menu

(Selection button: Mute key)

1) Main menu

```
ADJ IN Ver. 0.1

  A/D
  OUTPUT 1
  OUTPUT 2
  OUTPUT 3
  VIDEO 1
  VIDEO 2
  LINE
  SSS
  PATTE RN
  LENS
```

2) A/D menu

```
AID

  ROS      128
  GOS      128
  BOS      128
  GAIN     128
  R-D      128
  B-D      128
  G-D      128
```

This menu is to select the gamma setting for normal operation or for process operation. (Initial setting: ON)

3) OUTPUT1 menu

```
OUTPUT 1

  RI-BLK   128
  RI-GAIN  128
  G1-BLK   128
  G1-GAIN  128
  BI-BLK   128
  B1-GAIN  128
```

This menu is to select the colour bar pattern display ON/OFF. (Initial setting: ON)

4) OUTPUT2 menu

```
OUTPUT 2

  R1-BLK   128
  RI-GAIN  128
  GI-BLK   128
  G1-GAIN  128
  BI-BLK   128
  B1-GAIN  128
```

This menu is to select the colour bar pattern display ON/OFF. (Initial setting: ON)

5) OUTPUT3 menu

```
OUTPUT 3

  RC       128
  GC       128
  BC       128
  SH-PHASE   8
  RCK-PHASE  8
  GCK-PHASE  8
  BCK-PHASE  8
```

6) VIDEO1 menu

```
VIDEO 1

  NTSC-H    32
  PICTURE  128
  AGC      128
  BRIGHT   128
  TINT     128
  N-COLOR  128
  P-COLOR  128
  S-COLOR  128
```

This menu is to select the gamma setting for usual operation or for process operation. (Initial setting: OFF)

7) VIDEO2 menu

VIDEO 2	
VROS	128
VGOS	128
VBOS	128
R-GAIN	128
B-GAIN	128

This menu is to select the gamma setting for usual operation or for process operation (Initial setting: OFF)

8) LINE menu

LINE
L1
L2
L3
L4
OFF
TEMP OFF
TEMP CHECK

SSS menu

SSS	
TIME	Lamp on time display
S2	Initialization (EEPROM)
S3	Initialization (without blue background)
S4	Factory setting (English)
S5	Factory setting (Japanese)
LAMP TIME ON	

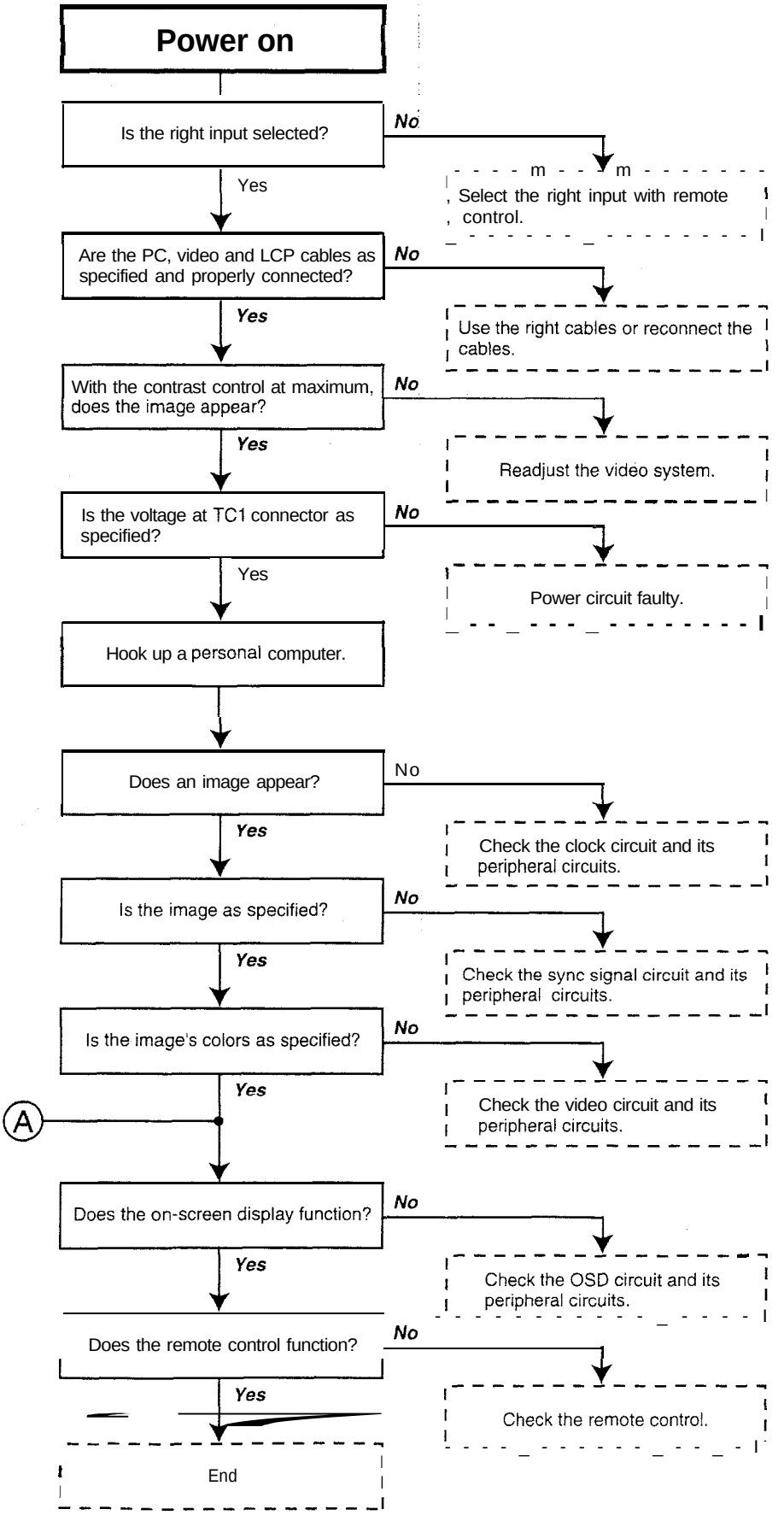
10) PATTERN menu

PATTERN		
RGB	1	Colors: Red - Green - Blue - White - Black - Magenta - Cyan - Yellow, in solid and cross-hatch pattern
CROSS	1	Lamp
RAMP		Step (8/16)
STEP		Colour bar
COLOR		Characters (Cross/ Backslash)
CHR		To manual mode
MANUAL		

11) LENS menu

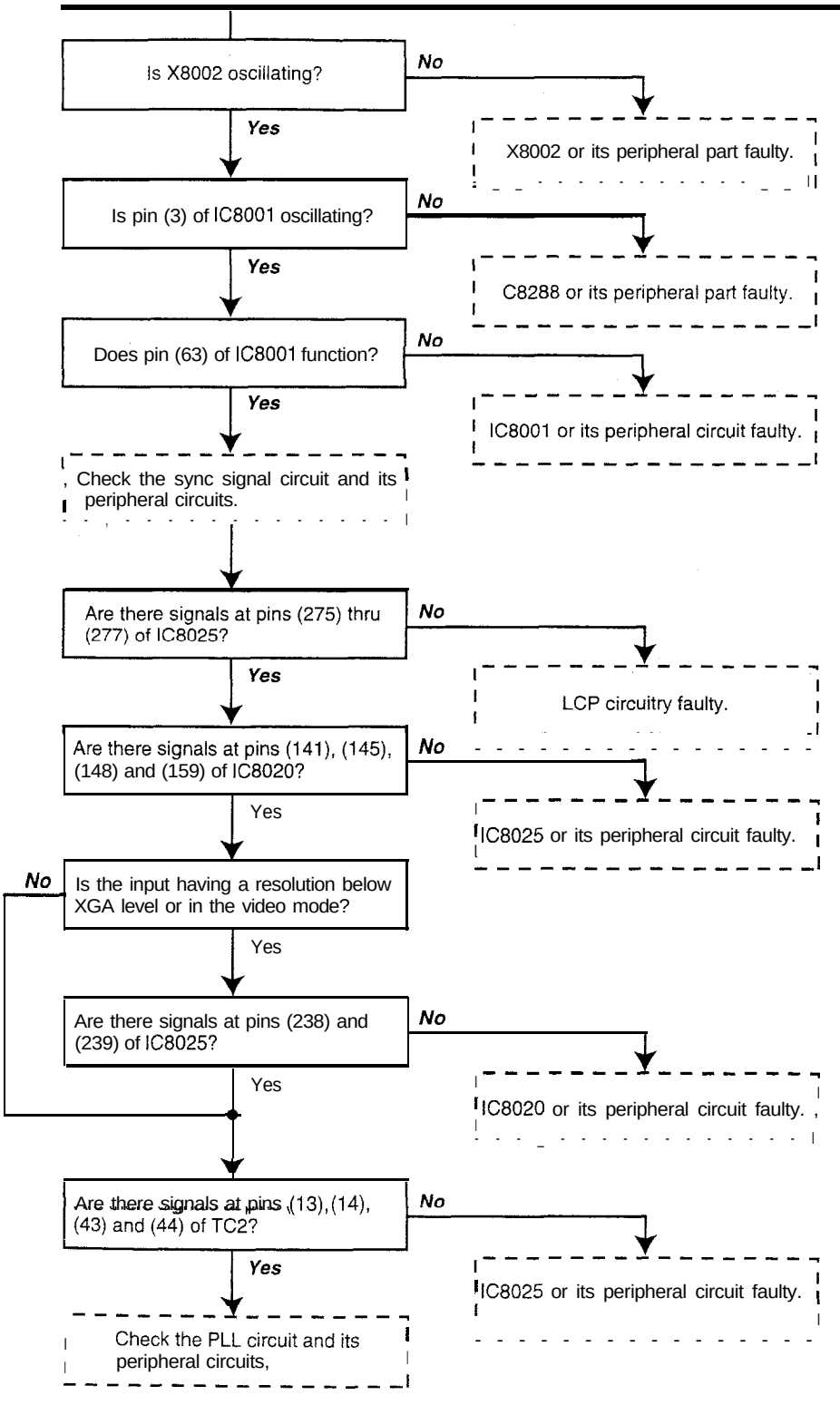
SSS	
TIME	
S2	
S3	
S4	
S5	
LAMP TIME ON	

TROUBLE SHOOTING TABLE



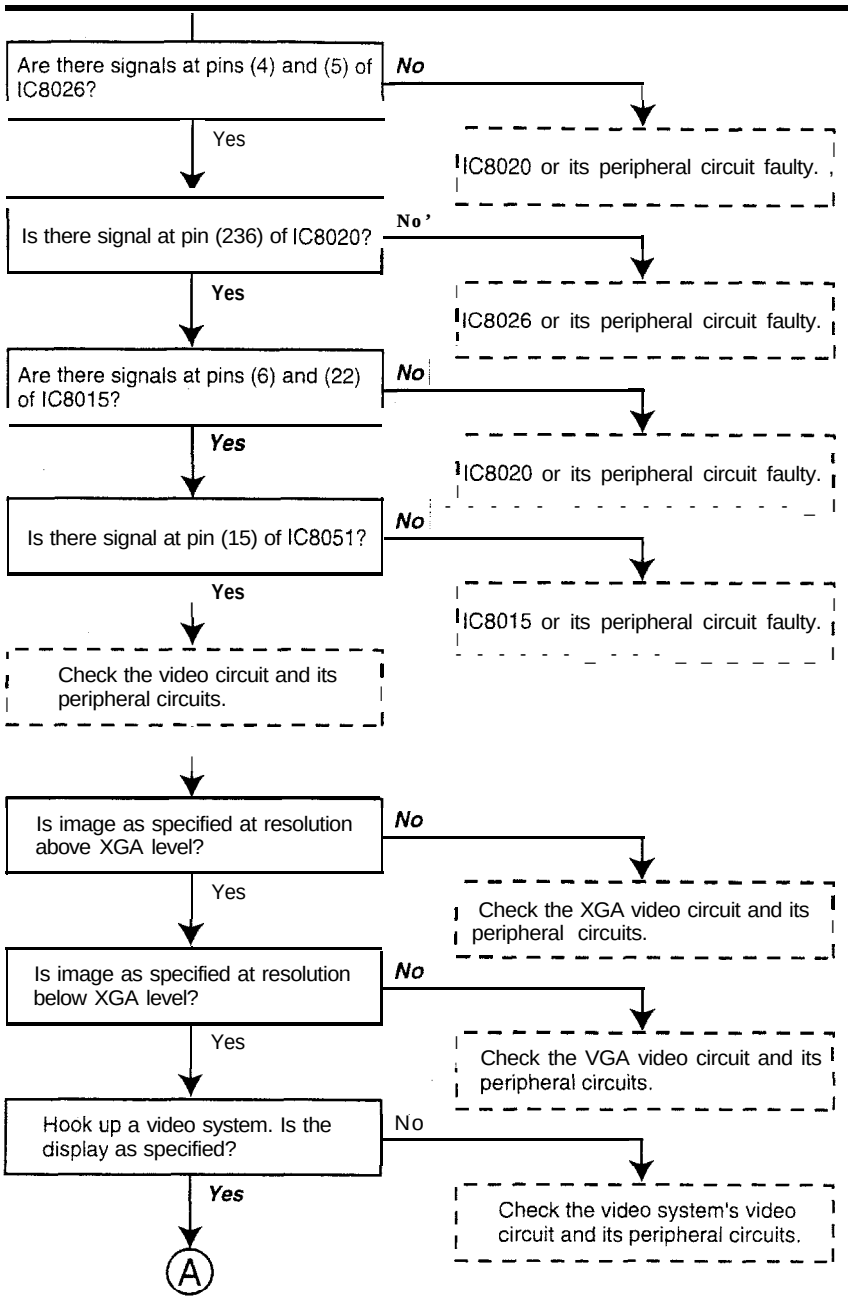
TROUBLE SHOOTING TABLE (Continued)

Checking the clock circuit and its peripheral circuits

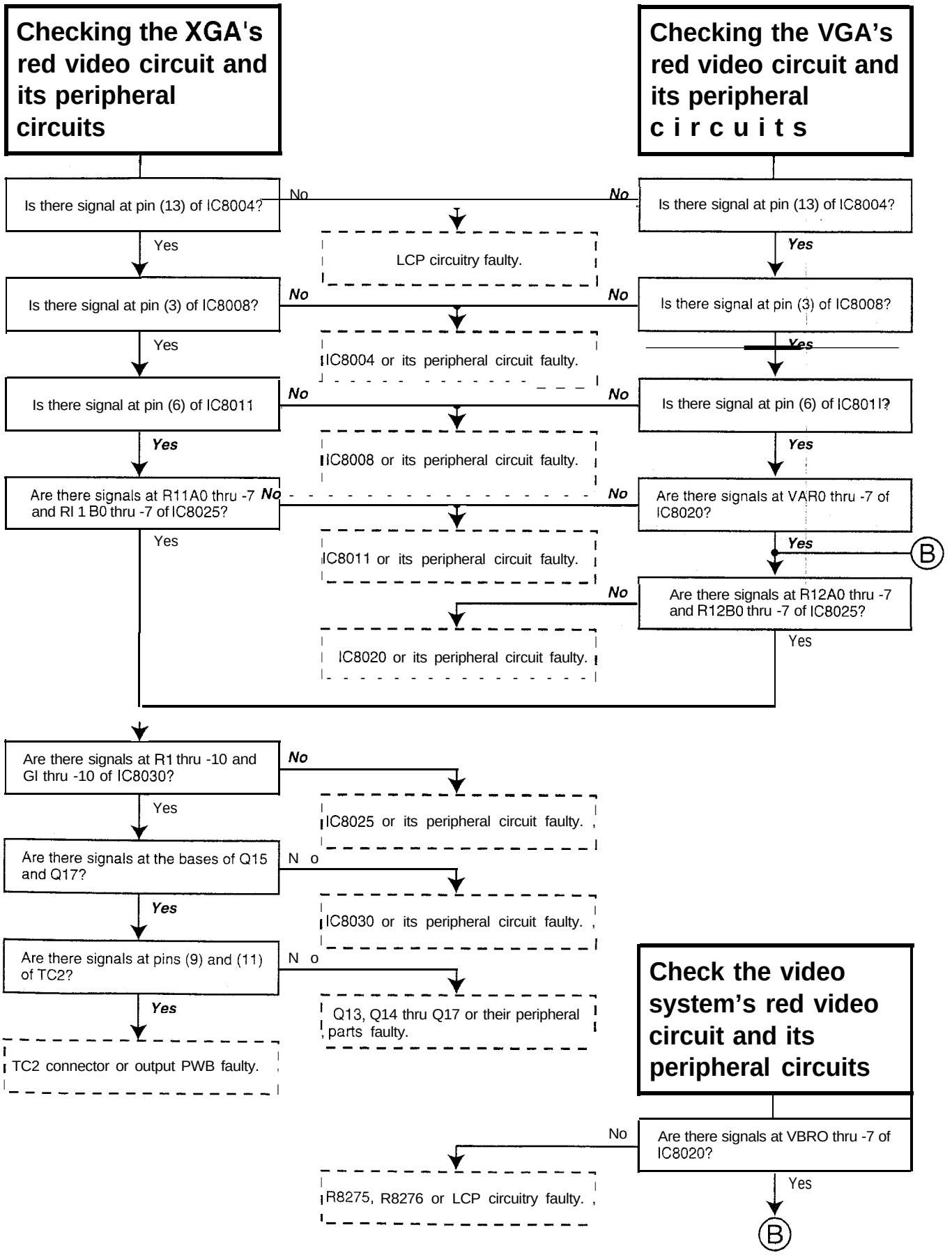

Is X8002 oscillating?
No
X8002 or its peripheral part faulty.
Yes
Is pin (3) of IC8001 oscillating?
No
C8288 or its peripheral part faulty.
Yes
Does pin (63) of IC8001 function?
No
IC8001 or its peripheral circuit faulty.
Yes
Check the sync signal circuit and its peripheral circuits.
Are there signals at pins (275) thru (277) of IC8025?
No
LCP circuitry faulty.
Yes
Are there signals at pins (141), (145), (148) and (159) of IC8020?
No
IC8025 or its peripheral circuit faulty.
Yes
No
Is the input having a resolution below XGA level or in the video mode?
Yes
Are there signals at pins (238) and (239) of IC8025?
No
IC8020 or its peripheral circuit faulty.
Yes
Are there signals at pins (13), (14), (43) and (44) of TC2?
No
IC8025 or its peripheral circuit faulty.
Yes
Check the PLL circuit and its peripheral circuits.

TROUBLE SHOOTING TABLE (Continued)

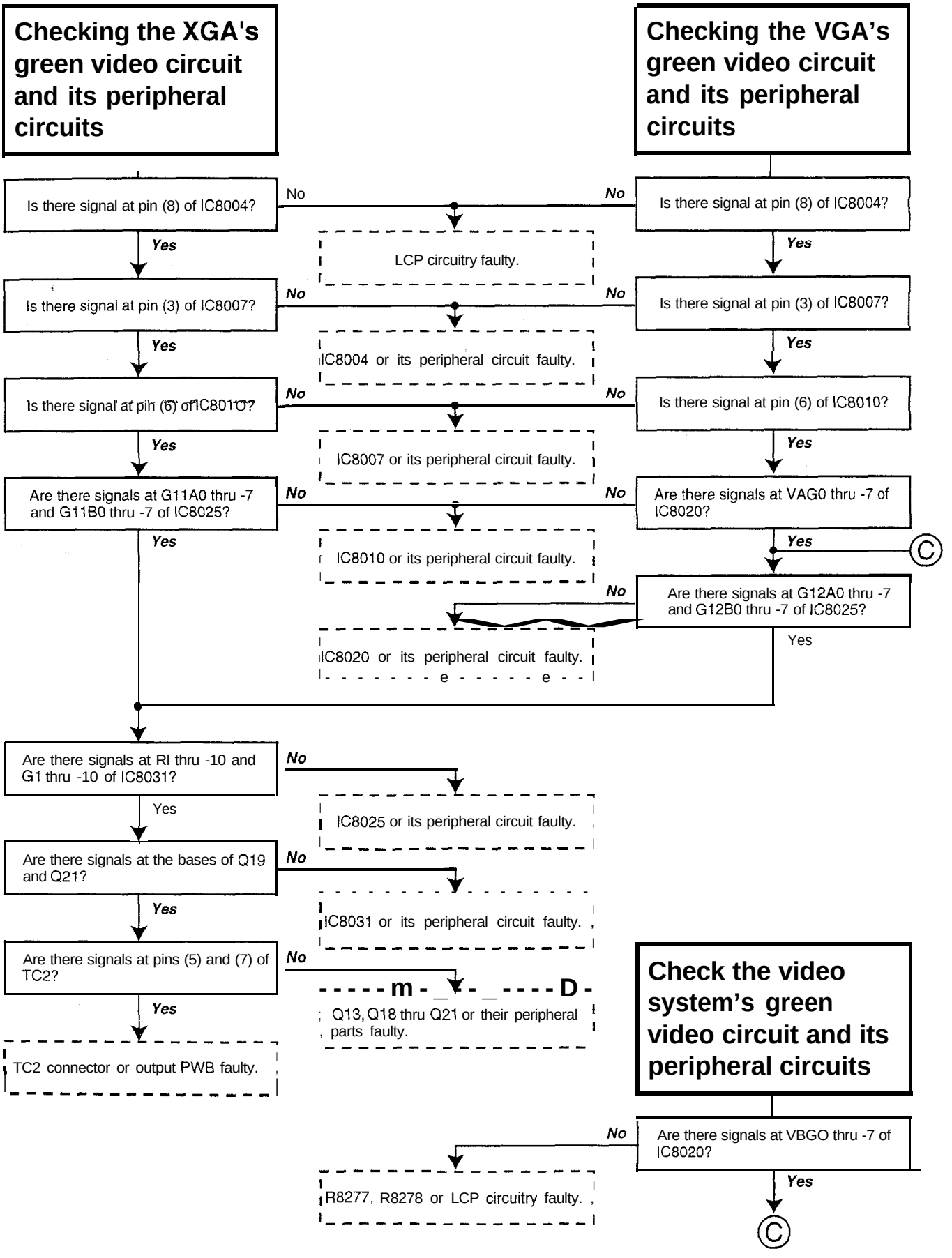
Checking the PLL circuit and its peripheral circuits 1


Are there signals at pins (4) and (5) of IC8026?
No
Yes
IC8020 or its peripheral circuit faulty.
Is there signal at pin (236) of IC8020?
No'
Yes
IC8026 or its peripheral circuit faulty.
Are there signals at pins (6) and (22) of IC8015?
No
Yes
IC8020 or its peripheral circuit faulty.
Is there signal at pin (15) of IC8051?
No
Yes
IC8015 or its peripheral circuit faulty.
Check the video circuit and its peripheral circuits.
Is image as specified at resolution above XGA level?
No
Yes
Check the XGA video circuit and its peripheral circuits.
Is image as specified at resolution below XGA level?
No
Yes
Check the VGA video circuit and its peripheral circuits.
Hook up a video system. Is the display as specified?
No
Yes
Check the video system's video circuit and its peripheral circuits.
A

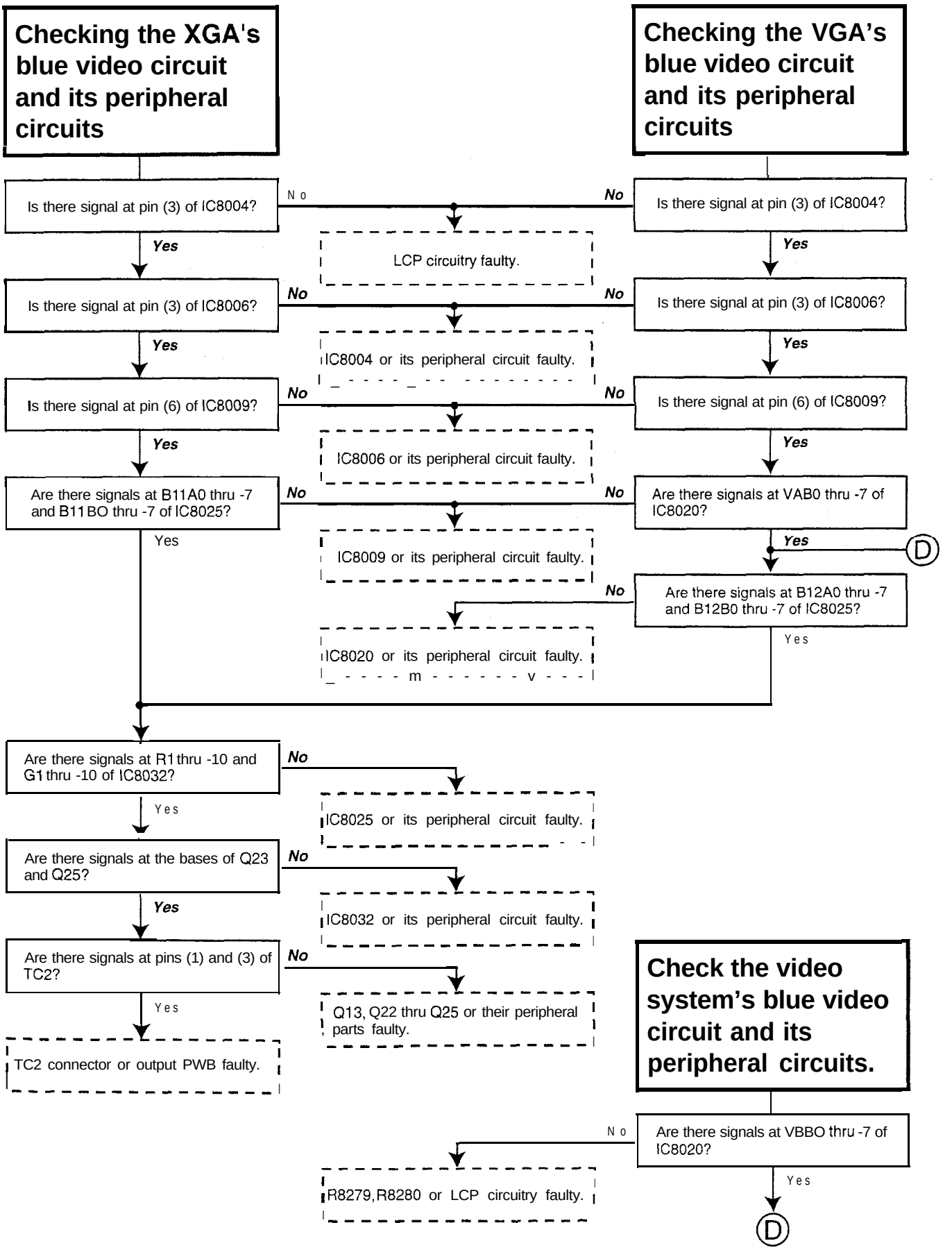
TROUBLE SHOOTING TABLE (Continued)


Checking the XGA's red video circuit and its peripheral circuits
Checking the VGA's red video circuit and its peripheral circuits
Is there signal at pin (13) of IC8004?
No
LCP circuitry faulty.
Yes
Is there signal at pin (3) of IC8008?
No
IC8004 or its peripheral circuit faulty.
Yes
Is there signal at pin (6) of IC8011
No
IC8008 or its peripheral circuit faulty.
Yes
Are there signals at R11A0 thru -7 and RI 1 B0 thru -7 of IC8025?
No
IC8011 or its peripheral circuit faulty.
Yes
Are there signals at R1 thru -10 and GI thru -10 of IC8030?
No
IC8025 or its peripheral circuit faulty.
Yes
Are there signals at the bases of Q15 and Q17?
No
IC8030 or its peripheral circuit faulty.
Yes
Are there signals at pins (9) and (11) of TC2?
No
Q13, Q14 thru Q17 or their peripheral parts faulty.
Yes
TC2 connector or output PWB faulty.
Is there signal at pin (13) of IC8004?
No
Yes
Is there signal at pin (3) of IC8008?
No
Yes
Is there signal at pin (6) of IC8011?
No
Yes
Are there signals at VAR0 thru -7 of IC8020?
No
Yes
B
Are there signals at R12A0 thru -7 and R12B0 thru -7 of IC8025?
No
IC8020 or its peripheral circuit faulty.
Yes
Check the video system's red video circuit and its peripheral circuits
Are there signals at VBRO thru -7 of IC8020?
No
R8275, R8276 or LCP circuitry faulty.
Yes
B

TROUBLE SHOOTING TABLE (Continued)

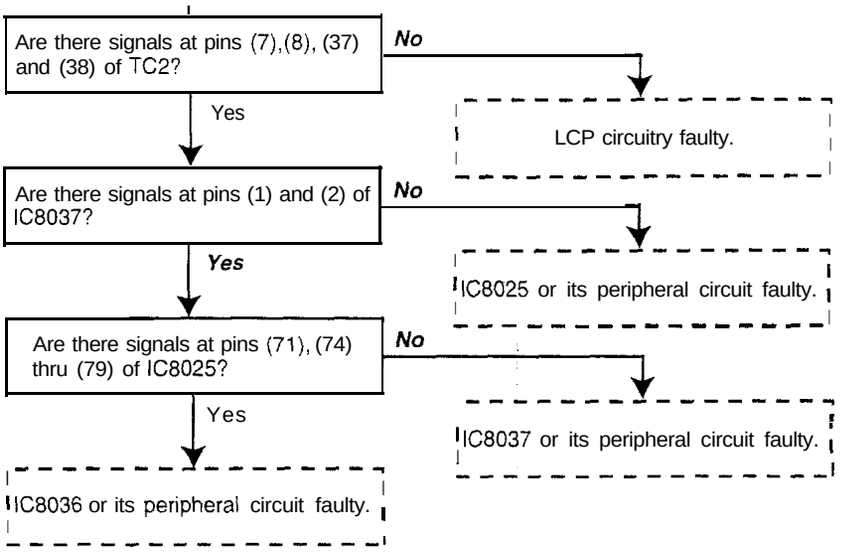

Checking the XGA's green video circuit and its peripheral circuits
Is there signal at pin (8) of IC8004?
No
LCP circuitry faulty.
Yes
Is there signal at pin (3) of IC8007?
No
IC8004 or its peripheral circuit faulty.
Yes
Is there signal at pin (6) of IC8010?
No
IC8007 or its peripheral circuit faulty.
Yes
Are there signals at G11A0 thru -7 and G11B0 thru -7 of IC8025?
No
IC8010 or its peripheral circuit faulty.
Yes
Are there signals at RI thru -10 and G1 thru -10 of IC8031?
No
IC8025 or its peripheral circuit faulty.
Yes
Are there signals at the bases of Q19 and Q21?
No
IC8031 or its peripheral circuit faulty.
Yes
Are there signals at pins (5) and (7) of TC2?
No
Q13, Q18 thru Q21 or their peripheral parts faulty.
Yes
TC2 connector or output PWB faulty.
Checking the VGA's green video circuit and its peripheral circuits
Is there signal at pin (8) of IC8004?
No
Yes
Is there signal at pin (3) of IC8007?
No
Yes
Is there signal at pin (6) of IC8010?
No
Yes
Are there signals at VAG0 thru -7 of IC8020?
No
Yes
Ⓒ
Are there signals at G12A0 thru -7 and G12B0 thru -7 of IC8025?
No
IC8020 or its peripheral circuit faulty.
Yes
Check the video system's green video circuit and its peripheral circuits
Are there signals at VBGO thru -7 of IC8020?
No
R8277, R8278 or LCP circuitry faulty.
Yes
Ⓒ

TROUBLE SHOOTING TABLE (Continued)

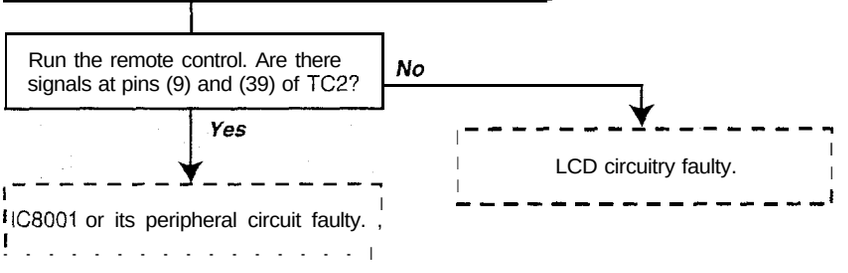

Checking the XGA's blue video circuit and its peripheral circuits
Is there signal at pin (3) of IC8004?
No
LCP circuitry faulty.
Yes
Is there signal at pin (3) of IC8006?
No
IC8004 or its peripheral circuit faulty.
Yes
Is there signal at pin (6) of IC8009?
No
IC8006 or its peripheral circuit faulty.
Yes
Are there signals at B11A0 thru -7 and B11BO thru -7 of IC8025?
No
IC8009 or its peripheral circuit faulty.
Yes
Are there signals at R1 thru -10 and G1 thru -10 of IC8032?
No
IC8025 or its peripheral circuit faulty.
Yes
Are there signals at the bases of Q23 and Q25?
No
IC8032 or its peripheral circuit faulty.
Yes
Are there signals at pins (1) and (3) of TC2?
No
Q13, Q22 thru Q25 or their peripheral parts faulty.
Yes
TC2 connector or output PWB faulty.
Checking the VGA's blue video circuit and its peripheral circuits
Is there signal at pin (3) of IC8004?
No
Yes
Is there signal at pin (3) of IC8006?
No
Yes
Is there signal at pin (6) of IC8009?
No
Yes
Are there signals at VAB0 thru -7 of IC8020?
No
Yes
D
Are there signals at B12A0 thru -7 and B12B0 thru -7 of IC8025?
No
IC8020 or its peripheral circuit faulty.
Yes
Check the video system's blue video circuit and its peripheral circuits.
Are there signals at VBBO thru -7 of IC8020?
No
R8279, R8280 or LCP circuitry faulty.
Yes
D

TROUBLE SHOOTING TABLE (Continued)

Checking the OSD circuit and its peripheral circuits

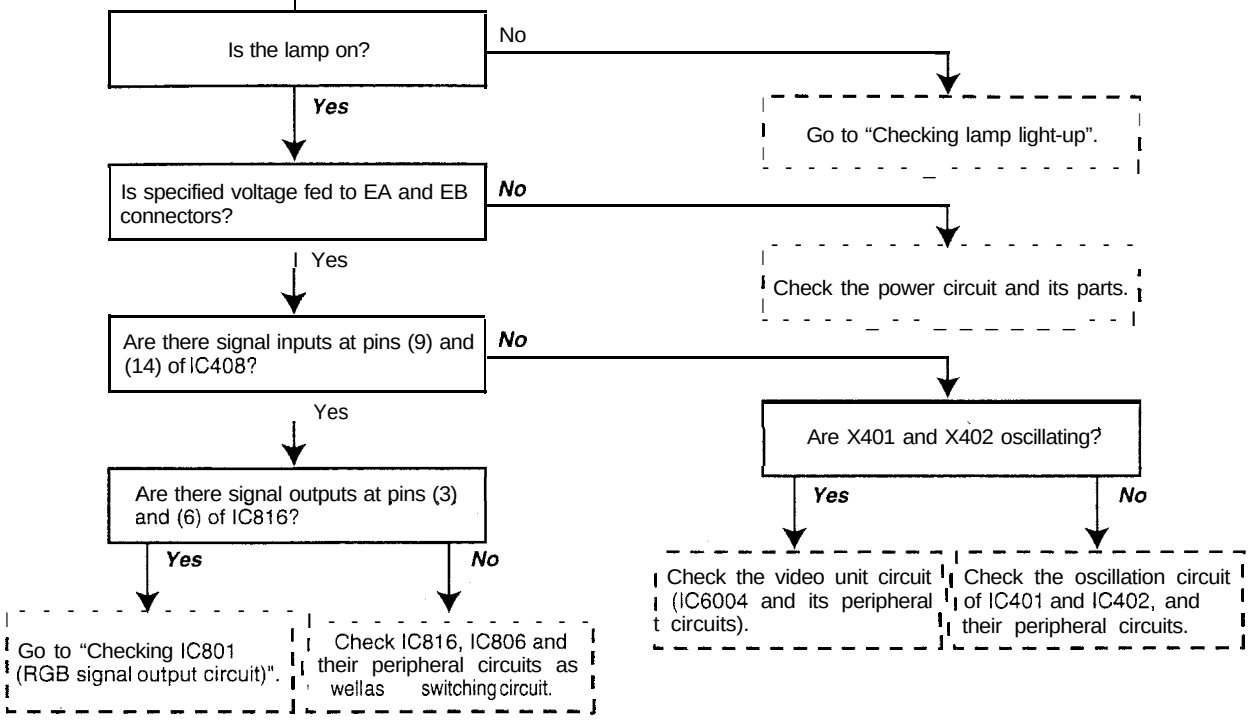

Are there signals at pins (7),(8), (37) and (38) of TC2?
No
LCP circuitry faulty.
Yes
Are there signals at pins (1) and (2) of IC8037?
No
IC8025 or its peripheral circuit faulty.
Yes
Are there signals at pins (71), (74) thru (79) of IC8025?
No
IC8037 or its peripheral circuit faulty.
Yes
IC8036 or its peripheral circuit faulty.

Checking the remote control

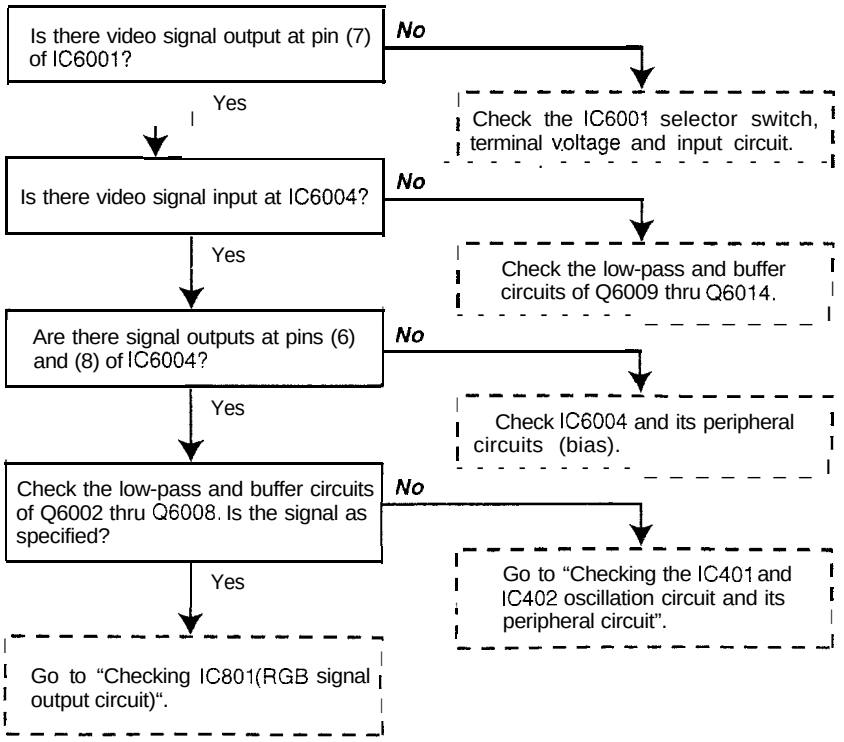

Run the remote control. Are there signals at pins (9) and (39) of TC2?
No
LCD circuitry faulty.
Yes
IC8001 or its peripheral circuit faulty.

TROUBLE SHOOTING TABLE (Continued)

Checking the video system

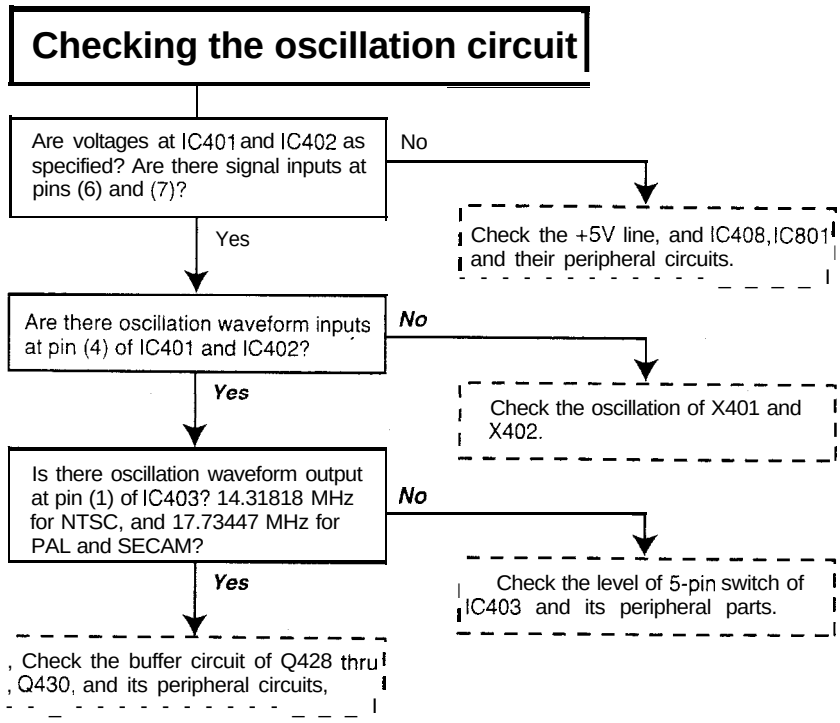

Is the lamp on?
No
Yes
Go to "Checking lamp light-up".
Is specified voltage fed to EA and EB connectors?
No
Yes
Check the power circuit and its parts.
Are there signal inputs at pins (9) and (14) of IC408?
No
Yes
Are X401 and X402 oscillating?
Yes
No
Are there signal outputs at pins (3) and (6) of IC816?
Yes
No
Check the video unit circuit (IC6004 and its peripheral circuits).
Check the oscillation circuit of IC401 and IC402, and their peripheral circuits.
Go to "Checking IC801 (RGB signal output circuit)".
Check IC816, IC806 and their peripheral circuits as well as switching circuit.

Checking the video unit circuit

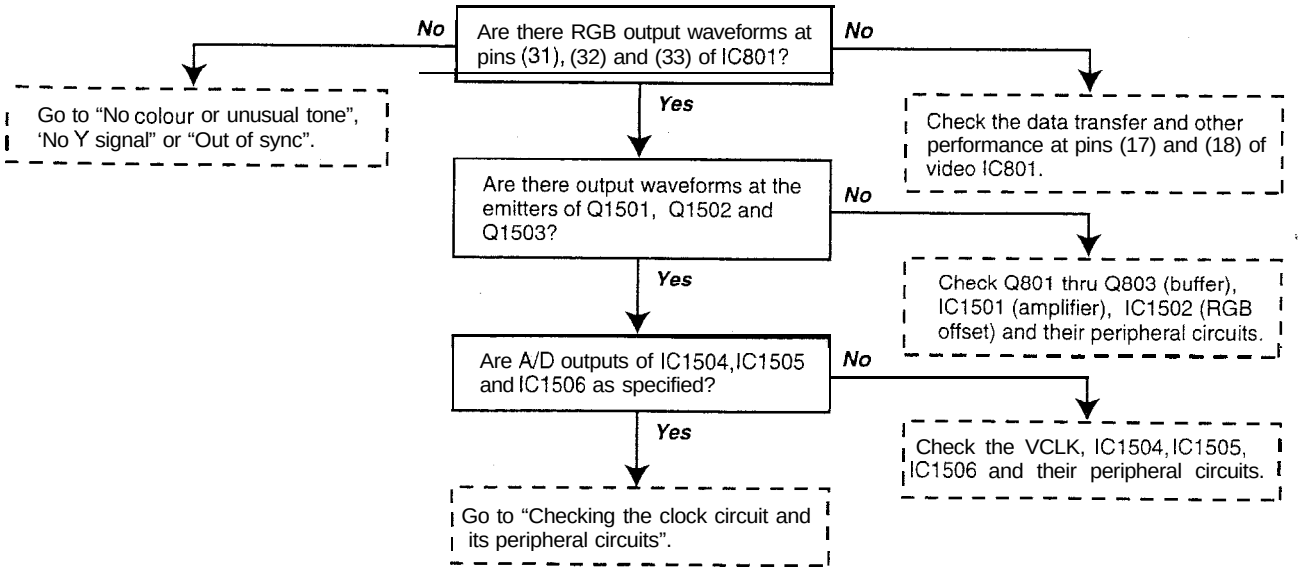

Is there video signal output at pin (7) of IC6001?
No
Yes
Check the IC6001 selector switch, terminal voltage and input circuit.
Is there video signal input at IC6004?
No
Yes
Check the low-pass and buffer circuits of Q6009 thru Q6014.
Are there signal outputs at pins (6) and (8) of IC6004?
No
Yes
Check IC6004 and its peripheral circuits (bias).
Check the low-pass and buffer circuits of Q6002 thru Q6008. Is the signal as specified?
No
Yes
Go to "Checking the IC401 and IC402 oscillation circuit and its peripheral circuit".
Go to "Checking IC801(RGB signal output circuit)".

TROUBLE SHOOTING TABLE (Continued)

Checking the oscillation circuit

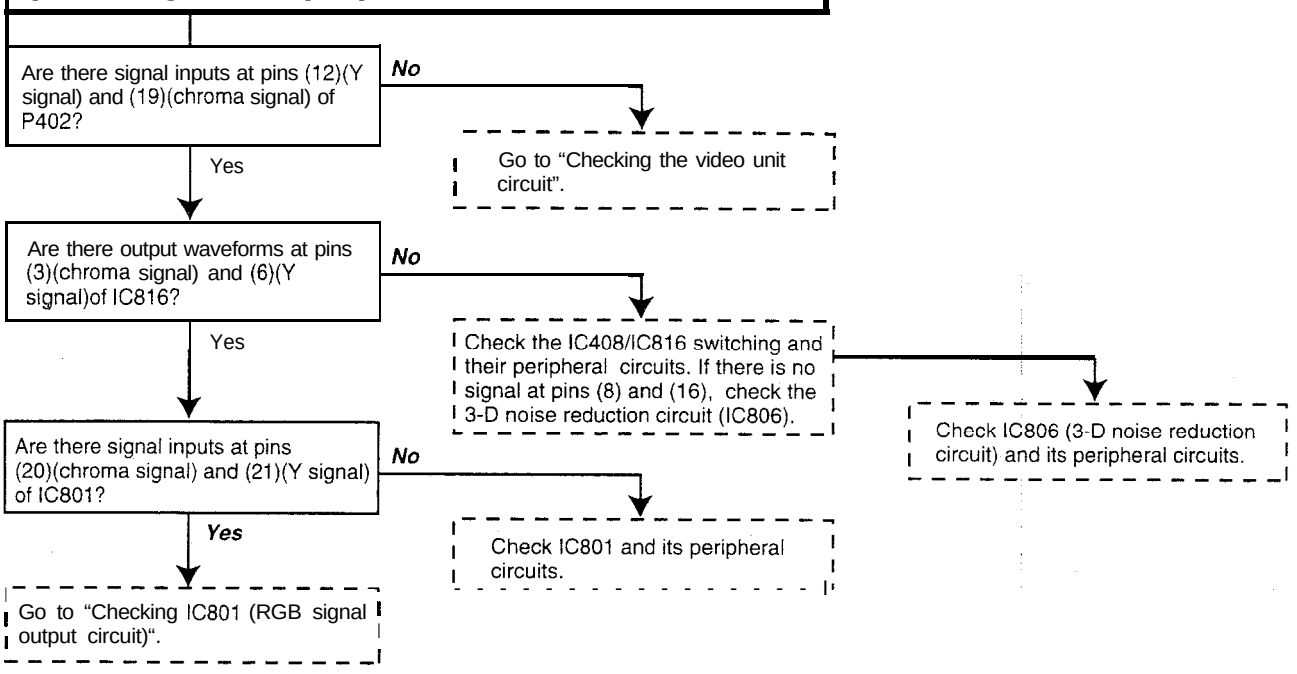

Are voltages at IC401 and IC402 as specified? Are there signal inputs at pins (6) and (7)?
No
Check the +5V line, and IC408, IC801 and their peripheral circuits.
Yes
Are there oscillation waveform inputs at pin (4) of IC401 and IC402?
No
Check the oscillation of X401 and X402.
Yes
Is there oscillation waveform output at pin (1) of IC403? 14.31818 MHz for NTSC, and 17.73447 MHz for PAL and SECAM?
No
Check the level of 5-pin switch of IC403 and its peripheral parts.
Yes
, Check the buffer circuit of Q428 thru , Q430, and its peripheral circuits,

Checking IC801 (RGB signal output circuit)

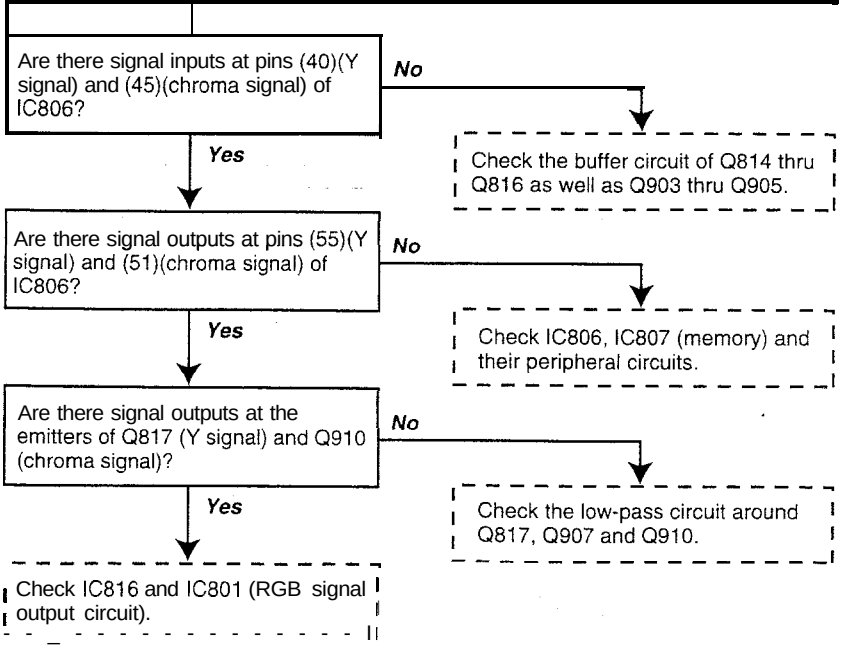

No
Are there RGB output waveforms at pins (31), (32) and (33) of IC801?
No
Go to "No colour or unusual tone", 'No Y signal" or "Out of sync".
Yes
Check the data transfer and other performance at pins (17) and (18) of video IC801.
Are there output waveforms at the emitters of Q1501, Q1502 and Q1503?
No
Yes
Check Q801 thru Q803 (buffer), IC1501 (amplifier), IC1502 (RGB offset) and their peripheral circuits.
Are A/D outputs of IC1504, IC1505 and IC1506 as specified?
No
Yes
Check the VCLK, IC1504, IC1505, IC1506 and their peripheral circuits.
Go to "Checking the clock circuit and its peripheral circuits".

TROUBLE SHOOTING TABLE (Continued)

Checking the chroma and Y signals of IC801 (RGB signal output)

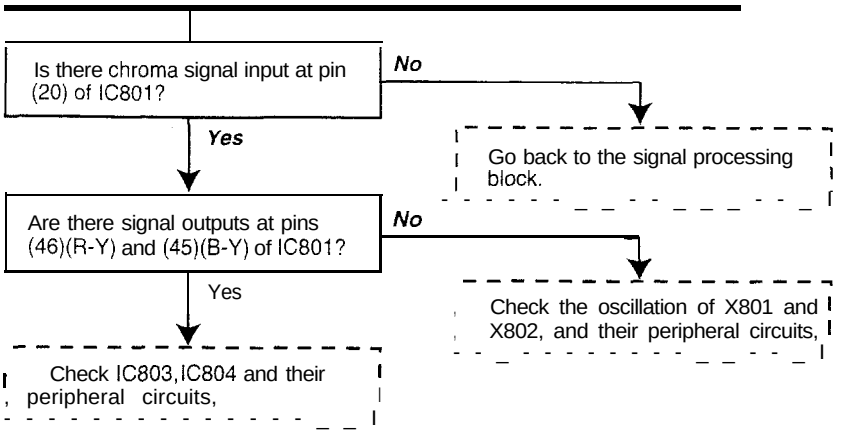

Are there signal inputs at pins (12)(Y signal) and (19)(chroma signal) of P402?
No
Go to "Checking the video unit circuit".
Yes
Are there output waveforms at pins (3)(chroma signal) and (6)(Y signal)of IC816?
No
Check the IC408/IC816 switching and their peripheral circuits. If there is no signal at pins (8) and (16), check the 3-D noise reduction circuit (IC806).
Check IC806 (3-D noise reduction circuit) and its peripheral circuits.
Yes
Are there signal inputs at pins (20)(chroma signal) and (21)(Y signal) of IC801?
No
Check IC801 and its peripheral circuits.
Yes
Go to "Checking IC801 (RGB signal output circuit)".

Checking IC806 (3-D noise reduction circuit) and its peripheral circuits

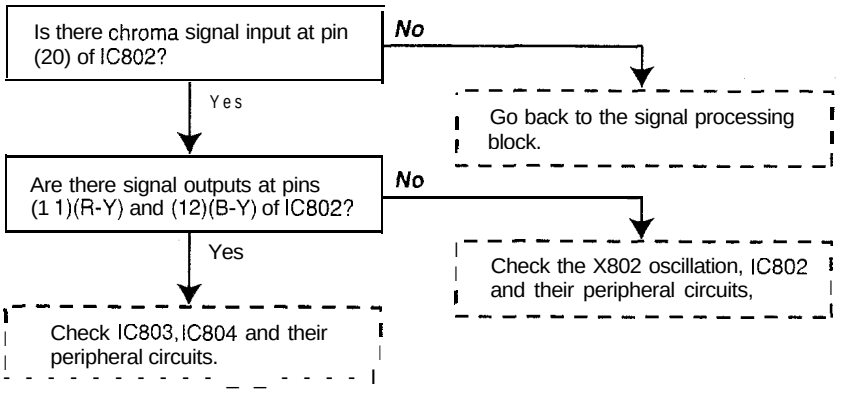

Are there signal inputs at pins (40)(Y signal) and (45)(chroma signal) of IC806?
No
Check the buffer circuit of Q814 thru Q816 as well as Q903 thru Q905.
Yes
Are there signal outputs at pins (55)(Y signal) and (51)(chroma signal) of IC806?
No
Check IC806, IC807 (memory) and their peripheral circuits.
Yes
Are there signal outputs at the emitters of Q817 (Y signal) and Q910 (chroma signal)?
No
Check the low-pass circuit around Q817, Q907 and Q910.
Yes
Check IC816 and IC801 (RGB signal output circuit).

TROUBLE SHOOTING TABLE (Continued)

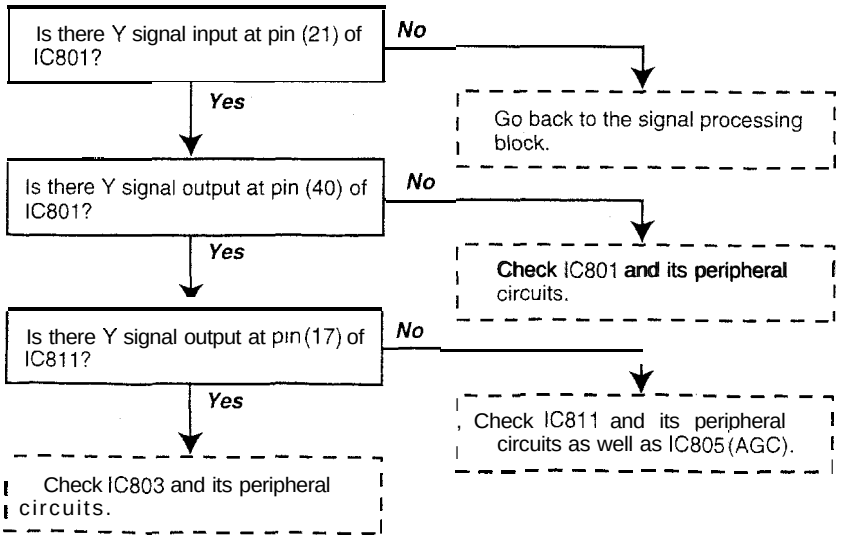
No colour or unusual tone (NTSC, PAL)


Is there chroma signal input at pin (20) of IC801?
No
Yes
Go back to the signal processing block.
Are there signal outputs at pins (46)(R-Y) and (45)(B-Y) of IC801?
No
Yes
Check the oscillation of X801 and X802, and their peripheral circuits,
Check IC803, IC804 and their peripheral circuits,

No colour or unusual tone (SECAM)

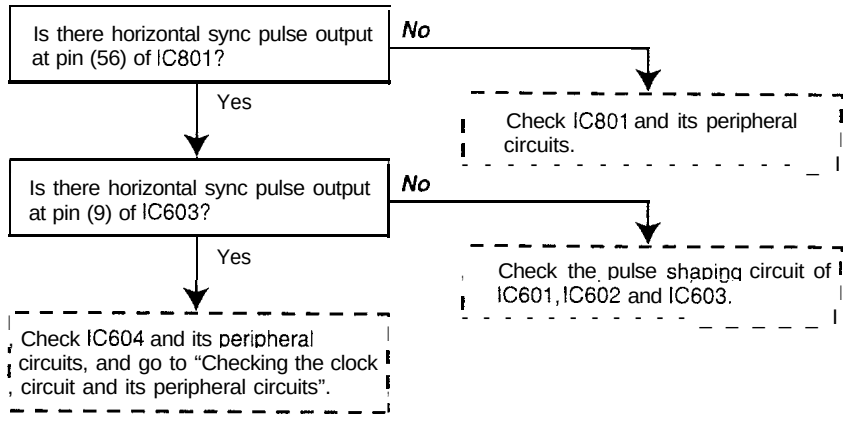

Is there chroma signal input at pin (20) of IC802?
No
Yes
Go back to the signal processing block.
Are there signal outputs at pins (1 1)(R-Y) and (12)(B-Y) of IC802?
No
Yes
Check the X802 oscillation, IC802 and their peripheral circuits,
Check IC803, IC804 and their peripheral circuits.

No or unusual Y signal

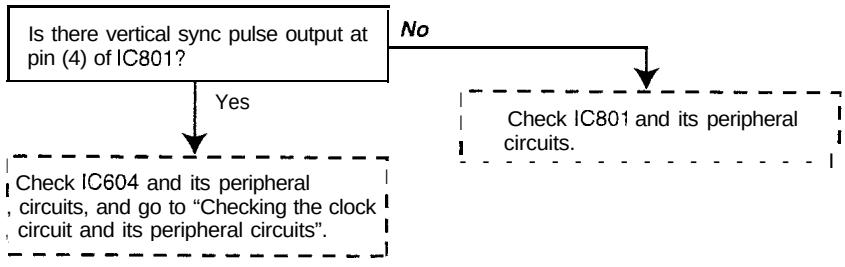

Is there Y signal input at pin (21) of IC801?
No
Yes
Go back to the signal processing block.
Is there Y signal output at pin (40) of IC801?
No
Yes
Check IC801 and its peripheral circuits.
Is there Y signal output at pin (17) of IC811?
No
Yes
Check IC811 and its peripheral circuits as well as IC805 (AGC).
Check IC803 and its peripheral circuits.

TROUBLE SHOOTING TABLE (Continued)

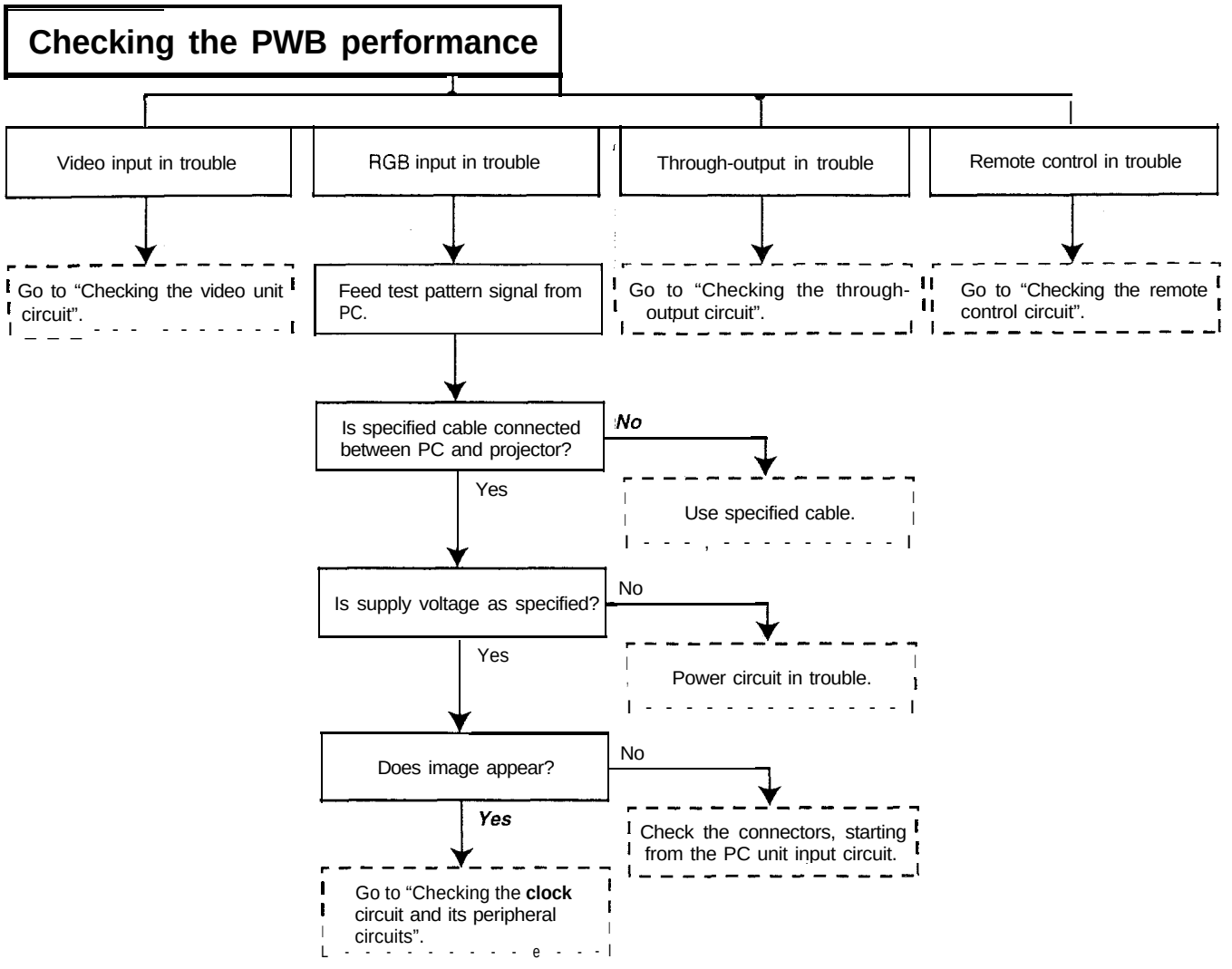
No or unusual horizontal sync


Is there horizontal sync pulse output at pin (56) of IC801?
No
Yes
Check IC801 and its peripheral circuits.
Is there horizontal sync pulse output at pin (9) of IC603?
No
Yes
Check the pulse shaping circuit of IC601, IC602 and IC603.
Check IC604 and its peripheral circuits, and go to "Checking the clock circuit and its peripheral circuits".

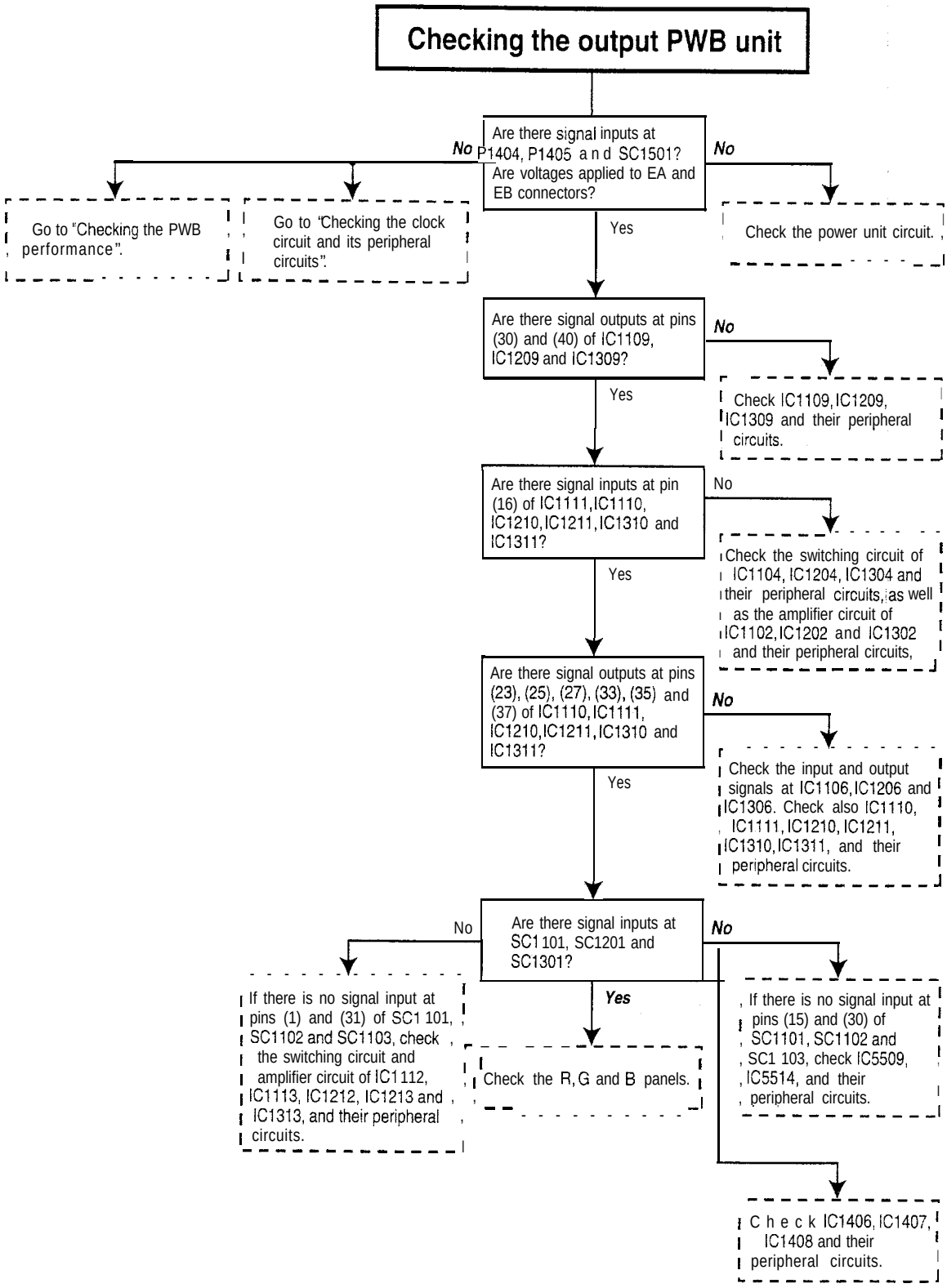
No or unusual vertical sync


Is there vertical sync pulse output at pin (4) of IC801?
No
Yes
Check IC801 and its peripheral circuits.
Check IC604 and its peripheral circuits, and go to "Checking the clock circuit and its peripheral circuits".

TROUBLE SHOOTING TABLE (Continued)

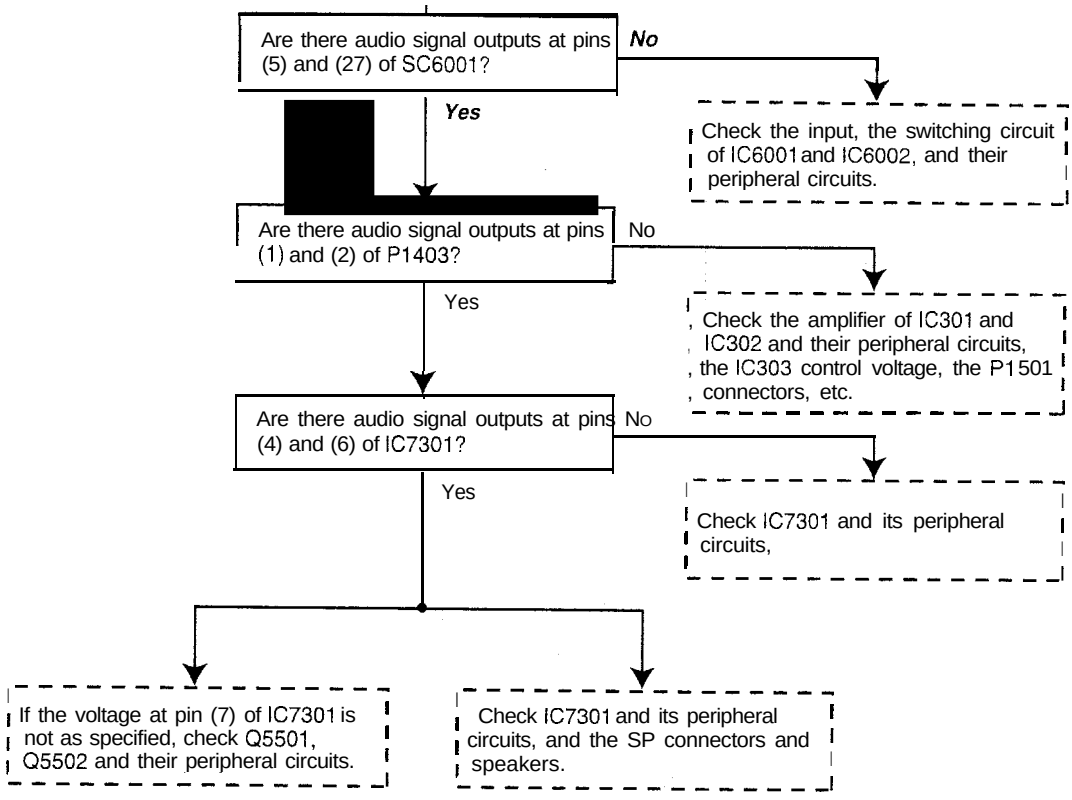

Checking the PWB performance
Video input in trouble
RGB input in trouble
Through-output in trouble
Remote control in trouble
Go to "Checking the video unit circuit".
Feed test pattern signal from PC.
Go to "Checking the through-output circuit".
Go to "Checking the remote control circuit".
Is specified cable connected between PC and projector?
No
Use specified cable.
Yes
Is supply voltage as specified?
No
Power circuit in trouble.
Yes
Does image appear?
No
Check the connectors, starting from the PC unit input circuit.
Yes
Go to "Checking the clock circuit and its peripheral circuits".

TROUBLE SHOOTING TABLE (Continued)


Checking the output PWB unit
Are there signal inputs at P1404, P1405 and SC1501? Are voltages applied to EA and EB connectors?
No
No
Yes
Go to "Checking the PWB performance".
Go to "Checking the clock circuit and its peripheral circuits".
Check the power unit circuit.
Are there signal outputs at pins (30) and (40) of IC1109, IC1209 and IC1309?
No
Yes
Check IC1109, IC1209, IC1309 and their peripheral circuits.
Are there signal inputs at pin (16) of IC1111, IC1110, IC1210, IC1211, IC1310 and IC1311?
No
Yes
Check the switching circuit of IC1104, IC1204, IC1304 and their peripheral circuits, as well as the amplifier circuit of IC1102, IC1202 and IC1302 and their peripheral circuits.
Are there signal outputs at pins (23), (25), (27), (33), (35) and (37) of IC1110, IC1111, IC1210, IC1211, IC1310 and IC1311?
No
Yes
Check the input and output signals at IC1106, IC1206 and IC1306. Check also IC1110, IC1111, IC1210, IC1211, IC1310, IC1311, and their peripheral circuits.
Are there signal inputs at SC1101, SC1201 and SC1301?
No
No
Yes
If there is no signal input at pins (1) and (31) of SC1101, SC1102 and SC1103, check the switching circuit and amplifier circuit of IC1112, IC1113, IC1212, IC1213 and IC1313, and their peripheral circuits.
Check the R, G and B panels.
If there is no signal input at pins (15) and (30) of SC1101, SC1102 and SC1103, check IC5509, IC5514, and their peripheral circuits.
Check IC1406, IC1407, IC1408 and their peripheral circuits.

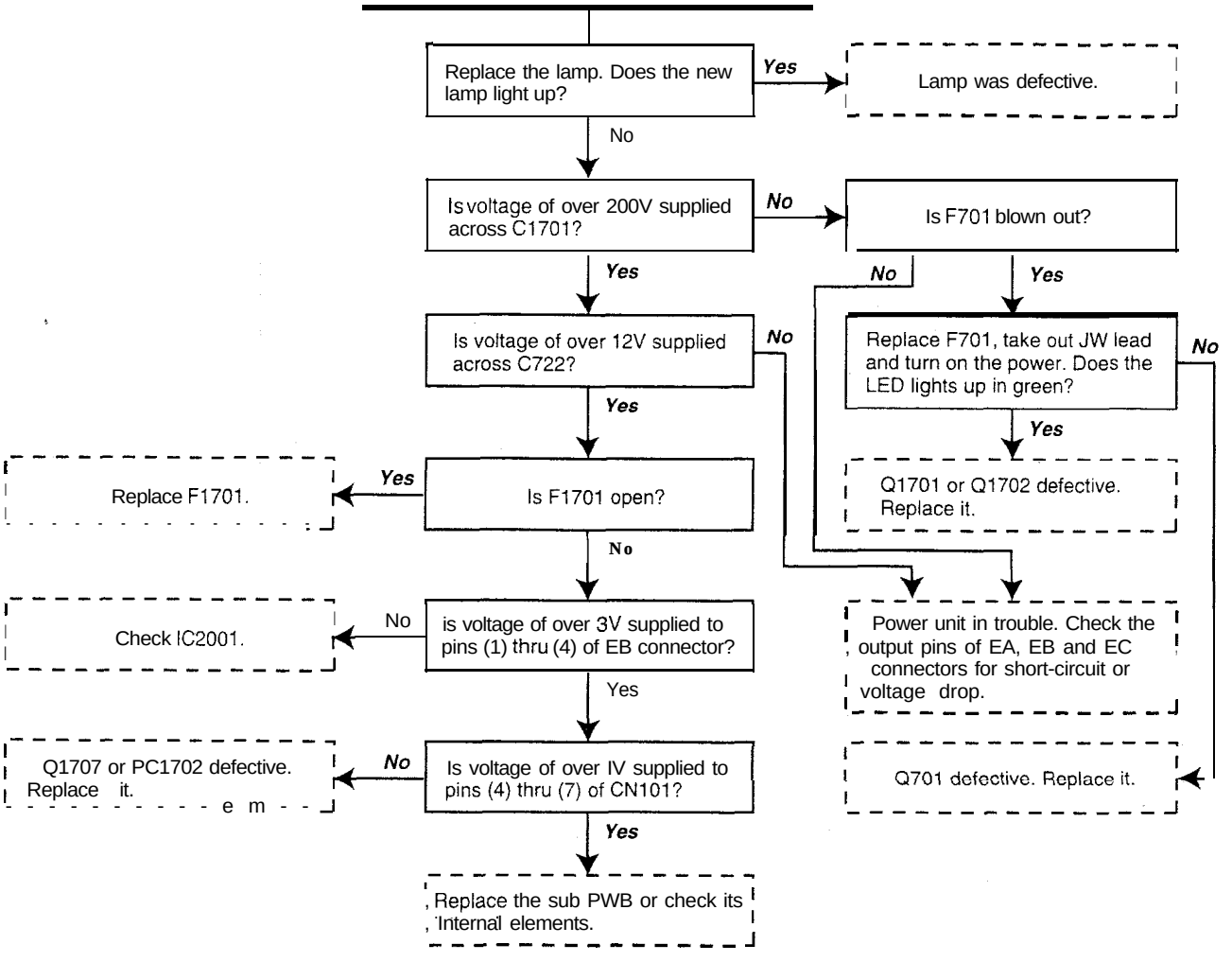
TROUBLE SHOOTING TABLE (Continued)

No audio output

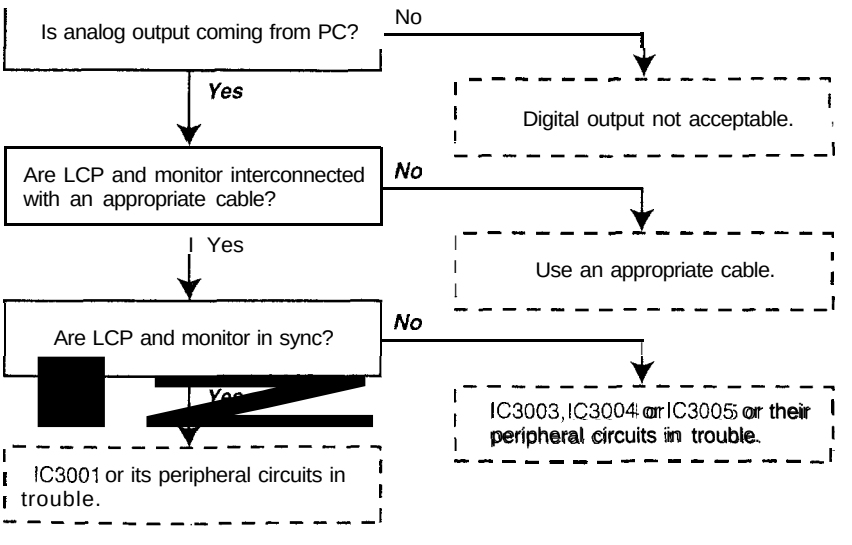

Are there audio signal outputs at pins (5) and (27) of SC6001?
No
Yes
Check the input, the switching circuit of IC6001 and IC6002, and their peripheral circuits.
Are there audio signal outputs at pins (1) and (2) of P1403?
No
Yes
Check the amplifier of IC301 and IC302 and their peripheral circuits, the IC303 control voltage, the P1501 connectors, etc.
Are there audio signal outputs at pins (4) and (6) of IC7301?
No
Yes
Check IC7301 and its peripheral circuits,
If the voltage at pin (7) of IC7301 is not as specified, check Q5501, Q5502 and their peripheral circuits.
Check IC7301 and its peripheral circuits, and the SP connectors and speakers.

TROUBLE SHOOTING TABLE (Continued)

Lamp does not light up


Replace the lamp. Does the new lamp light up?
Yes
Lamp was defective.
No
Is voltage of over 200V supplied across C1701?
No
Is F701 blown out?
Yes
No
Yes
Is voltage of over 12V supplied across C722?
No
Replace F701, take out JW lead and turn on the power. Does the LED lights up in green?
No
Yes
Yes
Replace F1701.
Yes
Is F1701 open?
Q1701 or Q1702 defective. Replace it.
No
Check IC2001.
No
is voltage of over 3V supplied to pins (1) thru (4) of EB connector?
Power unit in trouble. Check the output pins of EA, EB and EC connectors for short-circuit or voltage drop.
Yes
Q1707 or PC1702 defective. Replace it.
No
Is voltage of over IV supplied to pins (4) thru (7) of CN101?
Q701 defective. Replace it.
Yes
Replace the sub PWB or check its internal elements.

Checking the throughout circuit


Is analog output coming from PC?
No
Yes
Digital output not acceptable.
Are LCP and monitor interconnected with an appropriate cable?
No
Yes
Use an appropriate cable.
Are LCP and monitor in sync?
No
IC3003, IC3004 or IC3005 or their peripheral circuits in trouble.
IC3001 or its peripheral circuits in trouble.